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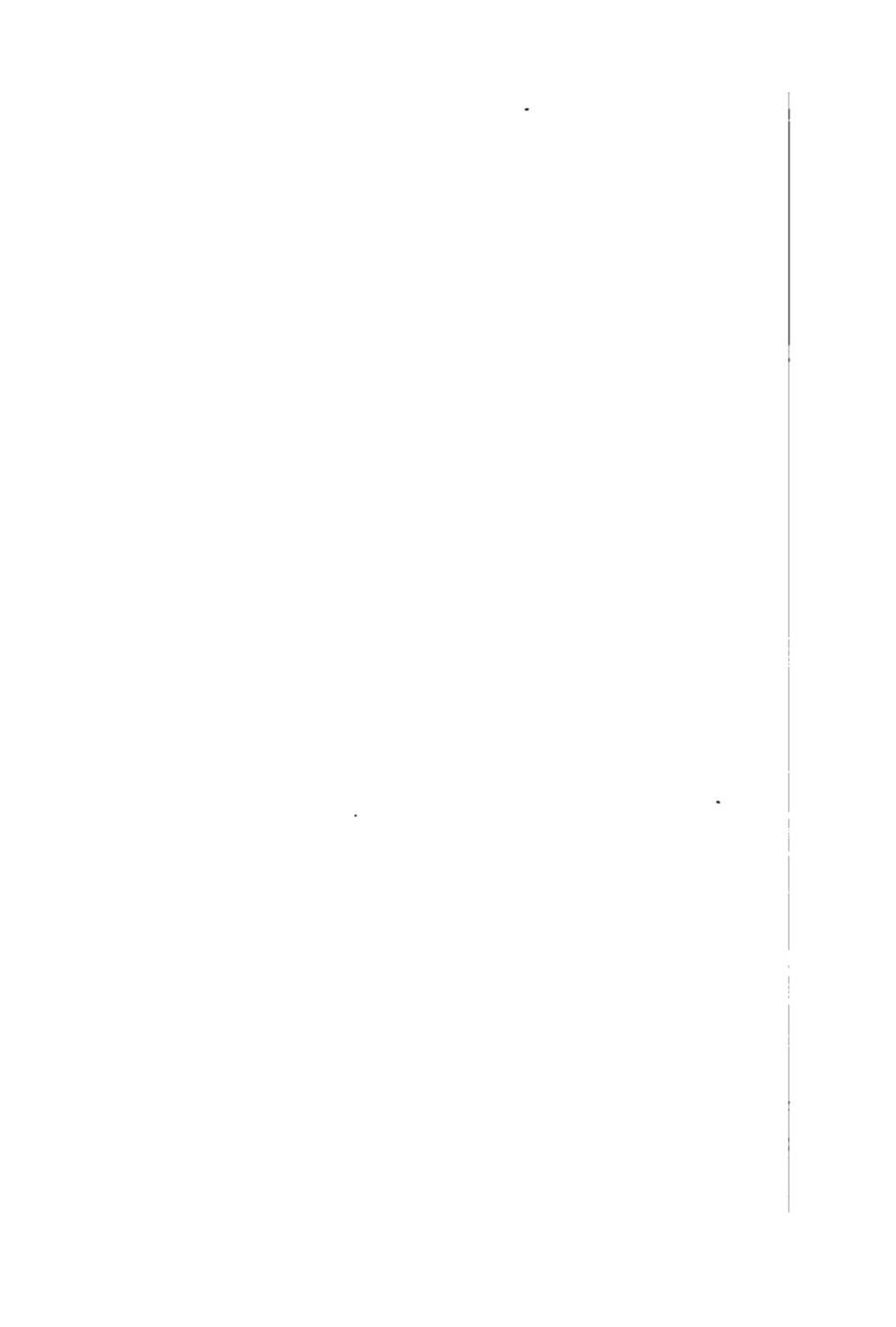
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Contents.

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New. York.

The best Paper of the
WORLD.

SCIENTIFIC AM

MECHANICAL INGENUITY & INVENTION

THE
UNITED STATES
PATENT LAW.
INSTRUCTIONS
HOW TO OBTAIN LETTERS PATENT
FOR NEW INVENTIONS:

ING A VARIETY OF USEFUL INFORMATION CONCERNING THE
PRACTICE OF THE PATENT-OFFICE; HOW TO SELL
PATENTS; HOW TO SECURE FOREIGN PATENTS; FORMS FOR
ASSIGNMENTS AND LICENSES; TOGETHER WITH EN-
GRAVINGS AND DESCRIPTIONS OF THE CON-
DENSING STEAM-ENGINE, AND THE
PRINCIPAL MECHANICAL MOVE-
MENTS, VALUABLE TABLES,
CALCULATIONS, PROB-
LEMS, ETC., ETC.

BY

MUNN & CO., SOLICITORS OF PATENTS,
No. 37 Park Row, New-York.

—
New-York:

SELL BY MUNN & CO., AT THE OFFICE OF THE
SCIENTIFIC AMERICAN,
No. 37 PARK ROW.

—
1867.

Munn, 1860

HINTS TO INVENTORS,
CONCERNING THE

Procuring of Patents,

EITHER

AMERICAN OR FOREIGN,

WITH

SUGGESTIONS AND VALUABLE INFORMATION

TO

PATENTEES.

MUNN & CO., PATENT SOLICITORS,
SCIENTIFIC AMERICAN OFFICE.

No. 37 PARK ROW, NEW YORK.

1861.

E. O. JENKINS, Printer, 26 Frankfort St.

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1803, Sept. 2.

3.

John Quincy

of Boston.

Entered 1835

ADVICE TO INVENTORS.

HOW TO OBTAIN

American & European PATENTS.

WHEN an individual has made an invention, the first inquiry that naturally suggests itself is, "*Can I obtain a Patent?*" A *positive* answer to this question is only to be had by presenting a formal application for a patent to the Government, embracing a petition, specification, model, duplicate drawings, and the payment of the prescribed official fees. Aside from these steps, all that the inventor can do is, to submit his plans to persons experienced in the business of obtaining patents, and solicit their opinions and advice. If the parties consulted are honorable men, the inventor may safely confide his ideas to them, and they will inform him whether or not his invention is probably patentable.

Those who have made inventions, and desire to consult with us respecting the same, are *cordially invited to do so*. We shall be happy to see them in person at our office, or to advise them by mail, or through the SCIENTIFIC AMERICAN. In all cases they may expect from us an *honest opinion*. For these consultations, opinion and advice, we *make no charge*. A pen-and-ink sketch and a description of the invention should be sent, together with a stamp for return postage. Write plain; do not use pencil nor pale ink; be brief.

Remember that all business committed to our care and all consultations are kept by us *secret and strictly confidential*.

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PRELIMINARY EXAMINATIONS.

1. In many cases it will be advisable, as a measure of prudence, to order a PRELIMINARY EXAMINATION. This consists of a *special search*, made at the U. S. Patent Office, Washington, through the medium of our house in that city, to ascertain whether among all the thousands of patents and models there stored, any invention can be found which is similar in character to that of the applicant. On the completion of this special search we send a *written report* of the result to the party concerned, with suitable advice. Our charge for the service, including the report, is \$5. This search, though it involves the expense just named, will usually prove by far the most satisfactory. If the same device has been before patented, the time and expense of constructing models, preparing documents, &c., will, in most cases, be saved; if the invention has been in part patented, the applicant will be enabled to modify his claims and expectations accordingly. Many other obvious advantages attend the Preliminary Examination; although the strictest search does not always enable the applicant to know positively whether a patent can be had. Applications for patents are often rejected because the Examining-officer finds a description of the alleged invention in some foreign publication; or some other person has been previously rejected on an analogous device; or some other invention for a similar purpose partially resembles the applicant's in its construction; or the Government makes an unjust or uncommon decision. Against none of these contingencies does the Preliminary Examination provide; it will, however, generally inform the applicant whether an improvement similar to his, and used for the same purpose, *has ever been patented or not in this country*.

2. Parties desiring the Preliminary Examination are requested to remit the fee (\$5), and furnish us with a sketch and description of the invention.

Expense of Applying for a Patent; Rejections, &c., &c.

The Government fee for a patent is, in all cases, except for foreigners, \$30; foreigners who have resided in the United States for one year, and have made oath that they intend to become citizens, are also charged only \$30.

To the foregoing official fees must be added the attorney's fees for preparing the various documents and drawings. Our charge for *preparing a case, presenting it to Government, and attending to all business connected with it, until a decision is given*, is generally \$25; but the charge is higher if unusual labor is involved. If the patent is granted, no further expense ensues. If the application is rejected, we cause a *diligent investigation to be made*, at Washington, into the reasons presented by the Commissioner for refusing the patent. In making this examination we have access to all the drawings, models, books and specifications cited in reference, and we report the result as early as possible to our client. *For this service we make no charge.* If the rejection proves to be an unjust one—which sometimes happens—it can generally be reversed, and the patent obtained by further prosecution. For this prosecution we charge a fee proportionate to the extra labor involved payable on the issue of the Patent; but our demand will be reasonable and satisfactory to our clients, and will be arranged beforehand by special agreement.

WITHDRAWALS—On rejection, the applicant is entitled to withdraw \$20 from the Patent Office, if he elects to do so in preference to having his case prosecuted further.

GENERAL REMARKS.—For the information of applicants, we would state that some agents are in the habit of charging for the preparation of the case, and, having no further facilities *decline all investigation or prosecution*

Where examination is wanted upon more than one invention, \$5 for each must be sent; as each device requires a separate, careful search. Address MUNN & Co., 87 Park Row, N. Y.

OTHER INFORMATION.



If you wish for *general information* as to the rules and law of Infringements, Reissues, Claims, etc., state your inquiries clearly, and remit \$5. Opinions in special cases of Infringement cost more. See page 16.

If you wish for advice in regard to assignments, or upon the rights of parties under assignments, joint ownership in patents, contracts, or licenses, state the points clearly upon which information is wanted, and remit \$5.

If you desire to know in whose name the title to a Patent is officially recorded, at Washington; or if you wish for an abstract of all the deeds of transfer connected with a Patent, send us the name of the patentee, date of patent, etc., and remit \$5.

If you desire a sketch from the drawings of any Patent, and a description from the specification, give the patentee's name, date of the patent, and remit \$5.

If you desire to have an assignment of a Patent, or any share thereof, or a license, made out in the proper manner, and placed on record, give us the full names of the parties, residences, title of the invention, etc., and remit \$5. This includes record fee.

Inventions or shares thereof may be assigned either before or after the grant of a patent. Agreements and contracts in regard to inventions need to be recorded, like assignments, at Washington. For any agreement or contract that you wish prepared, remit \$5.

Remember that we (MUNN & Co.) have branch-offices in Washington, and have constant access to all the public records. We can therefore make for you *any kind of search*, or look up for you *any sort of information* in regard to Patents, or Inventions, or Applications for Patents, either pending or rejected, that you may desire.

an improvement on some known machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention. The proportion of parts, or scale on which a model is made, is a matter of no importance.

As soon as the model is ready, it should be carefully boxed and shipped by express or otherwise, to our address, viz.: MUNN & Co., No. 37 Park Row, New York City. Prepay the expense, and send express receipt to us by mail.

Simultaneously with the model, the inventor should also send us the amount of the Government fee—thirty dollars. The money may be forwarded either by express, with the model, or by mail. The safest way to remit is by draft on New York, payable to our order. Always send a letter with the model, and also with the remittance, stating the name and address of the sender. We sometimes receive envelopes containing money, but without any name or explanation; models are also frequently sent us, from equally unknown sources.

A full written description should also be sent with the model, embodying *all the ideas of the inventor respecting the improvement.*

On the reception of the model and Government fee, the case is duly registered upon our books, and the application proceeded with as fast as possible. When the documents are ready, we send them to the inventor by mail, for his examination, signature, and affidavit, with a letter of instruction, &c. Our fee for preparing the case is then due, and will be called for.

The average time required to procure a patent, when the case is conducted at our agency, is six weeks. We frequently get them through in less time; but in other cases, owing to delay on the part of the officials, the period is sometimes extended to two or three months, and even more. We make a special point to forward our cases *as rapidly as possible.*

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Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless the invention is one of great complication; the business can as well be done by correspondence.

When the invention consists of a new article of manufacture, or a new composition, samples of the separate ingredients sufficient for the purpose of experiment, and also of the manufacturing article itself, must be furnished.

CAVEATS.

A CAVEAT is a confidential communication made to the Patent Office, and is therefore filed within its secret archives. The privilege secured under a caveat is, that it entitles the caveator to receive notice, for a period of one year, of any application for a patent subsequently filed, and which is adjudged to be novel, and is likely to interfere with the invention described in the caveat, and the caveator is then required to complete his application for a patent within three months from the date of said notice. Caveat papers should be very carefully prepared. Our fee for this service varies from \$12 to \$15. The Government fee is \$20, and this sum applies when the application is made for a patent. Our fee does not. To enable us to prepare caveat papers, we only require a sketch and description of the invention; no model being necessary.

GOING TO WASHINGTON IN PERSON.

SOME inventors suppose, very naturally, that if personally present in Washington, they can get their cases through more expeditiously, or command other facilities which they cannot enjoy by mere correspondence through an agency like ours. But this is not so. *No inventor can possibly have facilities or influence superior*

to our own; for more than ONE-THIRD of the entire business of the Patent Office passes through our hands, and we have an office in Washington, charged with the especial duty of watching over and pressing forward the interests of our clients. The Patent Office does not prepare or amend imperfect patent papers, or build models. These must be provided by the applicant or his attorney, according to law, *otherwise his claim will not be considered*. For the convenience of those who visit Washington in person, however, we would state that they can have all their patent business *promptly attended to*, by calling at our BRANCH SCIENTIFIC AMERICAN OFFICE, corner of 7th and F streets, opposite the Patent Office.

INFRINGEMENTS.

THE manufacture, sale, or use, of a patented article, without consent of the owner of the patent, is an *infringement*, and subjects the infringer, by injunction from the Court, to an arrest of or prohibition from the employment of his machinery, shop works, factory and men, in the production of the article. In addition to injunction, the infringer is liable to be mulcted in treble the amount of damages awarded by the jury. The maker, the workman, the seller, and the purchaser if a user, are all liable, either collectively or individually.

The use of a patented device is sometimes an infringement upon a prior patent.

In view of these facts, parties who hold or are working under patents should seek the earliest and best advice, *whenever the question of infringement arises*. Many persons are "penny wise and pound foolish" in such matters. Reluctant in the beginning to expend the small amount needed to employ a reliable counselor to investigate the matter and show them exactly where they stand, some will rush headlong into the most serious difficulties; others will suffer themselves to be

MODELS, REMITTANCES, ETC.



PERSONS who apply for patents are by law required to furnish a model, in all cases where the invention can be illustrated or partly illustrated by a model. The model must not exceed twelve inches in any of its dimensions; it should be neatly made, of hard wood or metal, or other substantial material; the name of

the inventor should be engraved or painted upon it conspicuously. Where the invention consists of an improvement on some known machine, or part of a machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention. More than one patent cannot be taken out on one model.

When the invention consists of a new article of manufacture or a new composition, samples of the article must be furnished.

New medicines or medical compounds, and useful mixtures of all kinds, are patentable. Samples must be furnished, and a very minute statement must be made of the exact proportions and ingredients used.

As soon as the model or specimen is ready, it should be carefully boxed and shipped, by express or otherwise, to our address, namely, MUNN & Co., No. 37 Park Row, New-York City. Prepay the expense, and send the express receipt to us by mail.

Simultaneously with the model or specimens, the inventor should also send us the first instalment of the Government fee and stamps, \$16. The money may be forwarded either by express, with the model, or by mail. The safest way to remit is by draft on New-York, payable to our order, or by Post-Office order. Always send a letter with the model, and also with the remittance, stating the name and

suggestion of a crude idea, the making of an incomplete or inoperative model, the performance of experiments, the marking of sketches, are not, of themselves, conclusive evidence of priority.

As a general observation it may be remarked that "in a race of diligence he is the inventor who first reduces the thing to actual practice." Again, he is the prior inventor who first communicates the new thing so that no further exercise of inventive power is necessary; or so that any person skilled in the art can readily make or apply the improvement.

The taking of evidence in interference cases is a sort of private inquest. It is not necessarily a Court proceeding. Subpoenas cannot be issued nor compulsory process employed to cause parties to testify. The witnesses may be sworn before a Justice of the Peace, Notary, or other person empowered to administer oaths. Each party must notify the other of the time and place when and where he proposes to examine his witnesses, so that the opponent may have opportunity to cross examine. The evidence must be taken down by the magistrate, or under his direction, and by him sealed up and addressed to the Commissioner of Patents. Models, drawings, machines, specimens and exhibits of any kind may be put in evidence. The Commissioner fixes a certain day for the hearing of the case, prior to which the contestants may file arguments upon the merits.

The management of interferences forms a part of the Scientific American patent business. Our terms for attention to interferences are moderate, and dependent upon the time required. Address all letters to MUNN & Co., No. 37 Park Row, New York.

APPEALS.

The law provides for an Appeal from the decisions of the Commissioner of Patents to the U. S. Court of the District of Columbia. These Appeals are heard by any one of the Judges before whom the applicant elects to

bring the case. No jury. All the papers, models, &c., are sent by the Commissioner to the Judge, who then reviews the case, and either sustains or reverses the Commissioner's decision. The party taking the appeal pays an official fee of \$25. The Judge appoints a day of hearing. The applicant can appear in person or by counsel to state his case and file a written argument. Five days are allowed the opponent to put in an answer, and a similar period to the appellant for a closing reply.

Many important cases are brought before the Judges on Appeal, and the decisions of the Commissioner are not unfrequently reversed. We have had successful experience in conducting these appeals, and our services can be retained on moderate terms.

SUGGESTIONS ABOUT FOREIGN PATENTS.

AMERICAN INVENTORS should bear in mind that, as a general rule, any invention which is valuable to the patented in this country, is worth equally as much in England, and some other foreign countries. Four patents—American, English, French and Belgian—will secure an inventor exclusive monopoly to his discovery, among *one hundred millions* of the most intelligent people in the world. The facilities of business and steam communication are such, that patents can be obtained abroad by our citizens almost as easily as at home. The majority of all patents taken out by Americans in foreign countries are obtained through the SCIENTIFIC AMERICAN PATENT AGENCY. Having established agencies at all the principal European seats of Government, we obtain patents in Great Britain, France, Belgium, Prussia, Austria, Spain, &c., with promptness and despatch. *A Circular, containing further information and a synopsis of the Patent Laws of various countries, will be furnished on application to Messrs. MUNN & Co.*

It is generally much better to apply for foreign patents simultaneously with the application *here*; or if this cannot be conveniently done, as little time as possible should be lost after the patent is issued, as the laws in some foreign countries allow patents to any one who first makes the application, and in this way many inventors are deprived of valid patents for their own inventions. Many valuable inventions are yearly introduced into Europe from the United States, by parties ever on the alert to pick up whatever they can lay their hands upon, which may seem useful.

Models are not required in any European country, but the utmost care and experience is necessary in the preparation of the specifications and drawings.

When parties intend to take out foreign patents, engravings should not be published until the foreign applications have been made.

CAUTION.—It has become a somewhat common practice for agents located in England to send out circulars soliciting the patronage of American inventors; we caution the latter against heeding such applications, or they may otherwise fall into the hands of irresponsible parties, and thus be defrauded of their rights. It is much safer for inventors to entrust their cases to the care of a competent, reliable agent at home.

While it is true of most European countries that the system of examination is not so rigid as that practiced in this country, yet it is vastly important that inventors should have their papers prepared only by the most competent solicitors, in order that they may stand the test of a searching legal examination; as it is a common practice, when a patentee finds a purchaser for his invention, for the latter to cause such examination to be made before he will accept the title.

It is also very unsafe to entrust a useful invention to any other than a solicitor of known integrity and ability. Inventors should beware of speculators, whether in the guise of Patent Agents or Patent Brokers, as they

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cannot ordinarily be trusted with valuable inventions.

Messrs. MUNN & Co. have been established *fifteen years* as American and Foreign Patent Attorneys, and Publishers of the SCIENTIFIC AMERICAN, and during this time they have been entrusted with some of the most important inventions of the age; and it is a matter of pardonable pride in them to state that not a single case can be adduced in which they have ever betrayed the important trust committed to their care. Their agents in London, Paris, and other Continental cities are among the oldest and most reliable Patent Solicitors in Europe, and they will have no connection with any other.

GENERAL REMARKS.

Messrs. MUNN & Co. have been personally familiar with the progress of invention and discovery during *fifteen years*. As an evidence of the confidence reposed in their ability and integrity, they may with propriety refer to the extraordinary fact that more than **THREE THOUSAND PATENTS** have been issued to their clients in the brief space of only **TWO YEARS**; and during the same period they have examined, through their efficient branch office in Washington, into the novelty of over **four thousand inventions**, thus affording to them a knowledge of the contents of the Patent Office unrivaled by any existing agency. Not only this, but more than one-half of all the patents secured by American citizens in European countries are taken through MUNN & CO.'S AGENCIES IN LONDON, PARIS, BRUSSELS, BERLIN AND VIENNA.

During a single month in 1860, **one hundred and forty-four American patents** were issued to our clients.

The convenient proximity of our Washington house to the Patent Office gives us rare facilities for the examination of all the official records, models, drawings, specifications, documents, &c. We can promptly furnish copies of any patent, assignment, &c. Searches made

as to the sale or transfer of rights. Assignments prepared, &c.

In addition to the advantages which the long experience and great success of our firm in obtaining patents present to inventors, they are informed that all inventions patented through our establishment are noticed, *at the proper time*, in the *SCIENTIFIC AMERICAN*. This paper is read by more than 100,000 persons every week, and has the most extensive and influential circulation of all the journals of its kind in the world.

We make these statements in order that parties who come to us for aid and information may feel, at the outset, that they are applying to men who are reliable, skillful, and successful in the business.

No individual in the country can possibly have so good an opportunity of knowing and judging as to the extent of business and the qualification of patent attorneys as the *Commissioner of Patents*. This officer is charged with the entire administration of the U. S. Patent Office. All its records are under his keeping and supervision; all correspondence is signed by him; and all patents issued are laid before him for signature. A certificate from a source so high and authentic cannot fail to command general respect and attention. JUDGE MASON, upon retiring from the office of Commissioner of Patents, sent us the following very flattering written testimonial.

MESSRS. MUNN & CO.:—I take pleasure in stating that while I held the office of Commissioner of Patents, **MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS.** I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill, and fidelity to the interests of your employers.

Yours, very truly, CHAS. MASON.

JUDGE MASON was succeeded by HON. JOSEPH HOLT, one of the most accomplished lawyers in the country, and whose administration of the Patent Office was so distin-

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guished that, upon the death of Gov. BROWN, he was appointed to the office of Postmaster General of the United States. Soon after entering upon his new duties, in March 1859, he addressed us the following very gratifying letter :

"**MESSRS. MUNN & Co. :—**

It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not justly deserved) the reputation of energy, marked ability and uncompromising fidelity in performing your professional engagements.

Very respectfully, your obedient servant,
J. HOLT."

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office, he wrote to us as follows :—

MESSRS. MUNN & Co. :—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency ; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy.

Very respectfully, your obedient servant,
Wm. D. BISHOP.

One great reason for our unrivaled success is, that our affairs are so systematized and arranged, under our personal direction, that every patent case submitted to our care receives the most careful study during its preparation, the most prompt despatch when all the patent papers are completed, and the most thorough attention at every stage of its subsequent progress.

We employ, to assist us, the most experienced corps of examiners, specification-writers and draughtsmen, that can be found. We have a branch house at Washington, supervised by one of our partners, and located directly opposite to the Patent Office, for the especial

purpose of attending to the interests of our clients, making searches, examinations, &c. In short, we believe that no other concern can present so great an array of talent, business facilities, influence and practical experience, as that which we throw open to the service of our clients.

All communications should be addressed to MUNN & CO., No. 37 PARK ROW, NEW YORK CITY.

EXTENSION OF PATENTS.

HUNDREDS of valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors.

We are persuaded that very many patents are suffered to expire without any effort at extension, owing to the ignorance of the patentees, their relatives or assigns, as to the current law and the mode of procedure in order to obtain a renewed grant.

The statute of 1836 provides that, when an inventor has failed to receive a sufficient reward for his invention, during the existence of the original patent, he may apply to the Commissioner for an extension of the term; and the Commissioner, on the presentation of proper proofs touching the amounts received by the applicant, the value of the invention, &c., is empowered to extend the patent for seven years, so that it will run for a period of *twenty-one years* from its original date. Some of the most valuable grants now existing are *extended patents*.

The proceedings and papers required for an extension are as follows :

1. Payment of \$40 Government fee into the Treasury.
2. Filing of petition for extension at least ninety days prior to the expiration of the patent.
3. Appointment of the day of hearing and publication of the application for extension in newspapers selected by the Commissioner, etc.
4. Surrender of the existing patent to the Commissioner.
5. Filing of statement by the patentee, in writing, under oath, of the ascertained value of the invention, which his receipts and expenditures in sufficient detail to exhibit the profits and losses arising from the invention.
6. Statements, under oath, of disinterested witnesses, supporting the petition.
7. Reference of the case to an Examining-officer.
8. Report of the Examiner to the Commissioner.

9. Hearing before the Commissioner, at which the arguments by counsel on both sides, for and against the extension, will be heard.

10. Final decision of the Commissioner of Patents.

11. Decree of extension and certificate thereof upon the original patent.

All the documents connected with extensions require to be carefully drawn up and attended to, as any failure, discrepancy, or untruth in the proceedings or papers is liable to defeat the application. Applicants for extensions should always place the management of their cases, from first to last, in the hands of faithful and experienced patent attorneys. Ordinary lawyers or agents, who have had no experience in extension cases, should never undertake them.

The Government fee in extension cases is \$40, as before stated. To this must be added the charges of the attorney who conducts the case, which should be agreed upon beforehand.

In case of the decease of the inventor, his administrator may apply for and receive the extension; but no extension can be applied for or granted to an assignee of an inventor.

Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

The inventor or his heirs may arrange to sell the extended term of the patent before the grant thereof, and the purchaser will enjoy the same when issued.

Patents may be extended, and preliminary advice obtained, by consulting or writing to MUNN & CO.

SEARCHES OF THE RECORDS.

HAVING access to all the official records at Washington, pertaining to the sale and transfer of patents, we are at all times ready to make examinations as to titles, ownership or assignments of patents. Fees moderate.

INVITATION TO INVENTORS.

Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & CO. They will find a large collection of models of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best-arranged in the world.

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The best Paper of the kind in the
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THE
SCIENTIFIC AMERICAN.

THIS is a Weekly Journal, full of Illustrations of New Inventions, and useful information for

Inventors, Mechanics & Manufacturers.

It has a very extensive circulation throughout the United States and in foreign countries, and is universally regarded as the most ably edited, and best conducted Journal of the kind in the world. It is the only Journal in this country that publishes a weekly

OFFICIAL LIST OF PATENT CLAIMS,

and the name and residence of every patentee. No inventor or patentee can successfully conduct his inventions without the practical hints derived from the columns of this paper.

A yearly volume of this valuable Journal contains about

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INSTRUCTIONS
How to Obtain Letters Patent
FOR NEW INVENTIONS:

INCLUDING A VARIETY OF USEFUL INFORMATION CONCERNING THE
RULES AND PRACTICE OF THE PATENT-OFFICE; HOW TO SELL
PATENTS; HOW TO SECURE FOREIGN PATENTS; FORMS FOR
ASSIGNMENTS AND LICENSES; TOGETHER WITH EN-
GRAVINGS AND DESCRIPTIONS OF THE CON-
DENSING STEAM-ENGINE, AND THE
PRINCIPAL MECHANICAL MOVE-
MENTS, VALUABLE TABLES,
CALCULATIONS, PROB-
LEMS, ETC., ETC.

BY

MUNN & CO., SOLICITORS OF PATENTS,
No. 37 Park Row, New-York.

•••
New-York:

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1867.

drawings, to be kept in the office for reference, must be on thick drawing-paper, sufficiently stiff to support itself upright in the portfolios. Tracings upon cloth, pasted upon thick paper, will not be admitted. The other drawing, which is to be attached to the patent, must have a margin of one inch at least for that purpose on the right-hand side, and should be on tracing-muslin, which will bear folding and transportation, and not on paper. The drawings should generally be in perspective, with such detached sectional and plane views as to clearly show what is the invention, its construction and operation. All thick drawings should be colored and shaded, and when different materials are united in a machine, as steel and iron, or wood and metal, the distinction should be indicated by different colors on the drawings. Each part must be distinguished by the same number or letter, whenever that part is delineated in the drawings.

Applicants are advised to employ competent artists to make the drawings, which will be returned if not executed in conformity with these rules. Thick drawings should never be folded for transmission.

Of the Examination.

All cases in the Patent Office are arranged in classes, which are taken up for examination in regular rotation; those in the same class being examined and disposed of, as far as practicable, in the order in which the respective applications are completed. When, however, the applicant has a foreign patent for his invention, or when such invention is deemed of peculiar importance to some branch of the public service, and when, for that reason, the head of some department of the government specially requests immediate action, the case will be taken up out of its order. These, with applications for reissues, are the only exceptions to the rule above stated in relation to the order of examination.

All amendments of the model, drawings, or specification must relate to the subject-matter originally embraced in at least one of them at the time of the filing of the application.

The personal attendance of the applicant at the Patent

Office is unnecessary. The business can be done by correspondence or by attorney.

When an application has been finally decided, the office will retain the original papers, furnishing the applicant copies—if he desires them—at the usual expense.

When a patent is granted, it will be transmitted to the patentee, or to his agent having a full power of attorney authorizing him to receive it.

Protests.

The Patent Office cannot stay the regular proceedings on applications for letters patent in consequence of protests founded upon *ex parte* statements, or upon affidavits from parties claiming to be aggrieved.

Retaining Patents in the Secret Archives.

An application upon which a patent has been allowed may, at the request of the applicant, or of his assignee, made before the patent has been recorded, be retained in the secret archives of the office for a period not exceeding six months from the date of the order to issue

Of Appeals.

After an application for a patent has been twice rejected by the examiner having it in charge, it may, at the option of the applicant, be brought before the board of examiners-in-chief.

For this purpose a petition in writing must be filed, signed by the party or his authorized agent or attorney, setting forth in general terms that the said applicant believes the rejection of his application to have been improper.

All cases which have been acted on by the board of examiners-in-chief may be brought before the Commissioner in person, upon a written request to that effect, and upon the payment of the fee required by law. A decision deliberately made and approved by one Commissioner will not be disturbed by his successor.

[The official fee for an appeal from the Examiners-in-Chief to the Commissioner in person, is \$20. A further ap-

peal may be taken from the decision of the Commissioner to the U. S. Court of the District of Columbia. Official fee, \$25. MUNN & Co. have had much successful experience in conducting these appeals. [Charges moderate.]

The mode of appeal from the decision of the office to the Supreme Court of the District of Columbia is by giving written notice thereof to the Commissioner, filing in the Patent Office, within such time as the Commissioner shall appoint, reasons of appeal, and paying to him the sum of twenty-five dollars.

Of Interferences.

When each of two or more persons claims to be the first inventor of the same thing, an "interference" is declared between them, and a trial is had before the Commissioner. Nor does the fact that one of the parties has already obtained a patent prevent such an interference; for, although the Commissioner has no power to cancel a patent already issued, he may, if he finds that another person was the prior inventor, give him also a patent, and thus place them on an equal footing before the courts and the public.

When an application is found to conflict with a caveat, the *caveator* is allowed a period of three months within which to present an application, when an interference may be declared.

In cases of interference, patentees have the same remedies by appeal as applicants in pending applications.

In contested cases, whether of interference or of extension, parties may have access to the testimony on file, prior to the hearing, in presence of the officer in charge; or, when practicable, copies may be obtained by them at the usual charges.

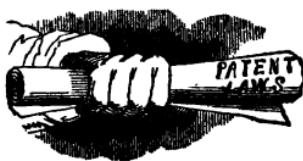
Upon the declaration of an interference, a day will be fixed for closing the testimony, and a further day fixed for the hearing of the cause. The arguments of counsel must be in the office on the day of hearing.

If either party wishes a postponement, either of the day for closing the testimony or of the day of hearing, he must, before the day he thus seeks to postpone is past, show by affidavit a sufficient reason for such postponement.

When an interference has been declared between two or more parties, and testimony has been taken by either of them, it will not be dissolved to admit a subsequent applicant; but when an interference is pending, and a new application claiming the invention in controversy comes into the Office before any ruling shall have been taken, the interference will be dissolved and a new one declared, which shall embrace all the claimants to the same invention.

[The management of Interferences is one of the most important duties in connection with Patent Office business. Our terms for attention to Interferences are moderate, and dependent upon the time required. Address all letters to MUNN & Co., No. 37 Park Row, New-York.]

Of Reissues.



A reissue is granted to the original patentee, his heirs, or the assignees of the entire interest, when by reason of an insufficient or defective specification the original patent is invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

An assignee or assignees making application for a reissue must own the entire interest in the patent, and must specify the date of the assignment.

The general rule is, that whatever is really embraced in the original invention, and so described or shown that it might have been embraced in the original patent, may be the subject of a reissue.

Reissued patents expire at the same time that the original patent would have done. For this reason, applications for reissue will be acted upon immediately after they are completed.

A patentee may, at his option, have in his reissue a separate patent for each distinct part of the invention comprehended in his original application, by paying the required fee in each case, and complying with the other requirements of the law, as in original applications.

Each division of a reissue constitutes the subject of a separate specification descriptive of the part or parts of the invention claimed in such division; and the drawing may represent only such part or parts.

One or more divisions of a reissue may be granted, though other divisions shall have been postponed or rejected.

In all cases of applications for reissues, the original claim is subject to reexamination, and may be revised and restricted in the same manner as in original applications.

But in all such cases, after the action of the Patent Office has been made known to the applicant, if he prefers the patent originally granted to that which will be allowed by the decision of the Office, he has the privilege of abandoning the latter and retaining the old patent.

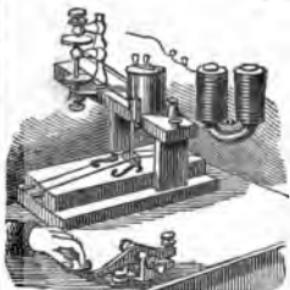
[The documents required for a Reissue are a Statement, Petition, Oath, Specification, Drawings. The official fee is \$30. Our charge, in simple cases, is \$25 for preparing and attending to the case. Total ordinary expense, \$55. Reissues may be applied for by the owners of the patent.

By means of Reissue, a patent may sometimes be divided into several separate patents. Many of the most valuable patents have been several times reissued and subdivided. Where a patent is infringed and the claims are doubtful or defective, it is common to apply for a Reissue with new claims which shall specially meet the infringers.

On making application for Reissue, the old or original patent must be surrendered to the Patent Office, in order that a new patent may be issued in its place. If the original patent has been lost, a certified copy of the patent must be furnished, with affidavit as to the loss. To enable us to prepare a Reissue, the applicant should send to us the original patent, remit as stated, and give a clear statement of the points which he wishes to have corrected. We can then immediately proceed with the case. Address MUNN & Co., 37 Park Row, New-York. We have had great experience in obtaining Reissues.]

Of Disclaimers.

Where, by inadvertence, accident, or mistake, the original patent is too broad, a disclaimer may be filed either by the original patentee or by any of his assignees.

Of Extensions.

The applicant for an extension must file his petition and pay in the requisite fee at least ninety days prior to the expiration of his patent. There is no power in the Patent Office to renew a patent after it has once expired.

The questions which arise on each application for an extension are :

1. Is the invention *novel* ?
2. Is it *useful* ?
3. Is it *valuable* and *important* to the public ?
4. Has the inventor been *adequately remunerated* for his time and expense in originating and perfecting it ?
5. Has he used due diligence in introducing his invention into general use ?

The first two questions will be determined upon the result of an examination in the Patent Office ; as will also the third, to some extent.

To enable the Commissioner to come to a correct conclusion in regard to the third point of inquiry, the applicant should, if possible, procure the testimony of persons disinterested in the invention, which testimony should be taken under oath.

In regard to the fourth and fifth points of inquiry, in addition to his own oath showing his receipts and expenditures on account of the invention, by which its value is to be ascertained, the applicant should show, by the testimony of witnesses on oath, that he has taken all reasonable measures to introduce his invention into general use ; and that, without default or neglect on his part, he has failed to obtain from the use and sale of the invention a reasonable remuneration for the time, ingenuity, and expense bestowed on the same, and the introduction thereof into use.

In case of opposition by any person to the extension of a patent, both parties may take testimony, each giving rea-

sonable notice to the other of the time and place of taking said testimony, which shall be taken according to the rules prescribed by the Commissioner of Patents in cases of interference.

All arguments submitted must be in writing.

[*NOTE.*—Only patents issued prior to March 4, 1861, can be extended.

Many valuable patents are annually expiring which might readily be extended, and, if extended, might prove the source of wealth to their fortunate possessors.

All the documents connected with extensions require to be carefully drawn up and attended to, as any failure, discrepancy, or untruth in the proceedings or papers is liable to defeat the application.

In case of the decease of the inventor, his administrator may apply for and receive the extension; but no extension can be applied for or granted to an assignee of an inventor. Parties desiring extensions will address MUNN & Co., 37 Park Row, N. Y.]

Of Foreign Patents.

The taking out of a patent in a foreign country does not prejudice a patent previously obtained here; nor does it prevent obtaining a patent here subsequently.

When the patent is granted here, after being obtained abroad, it will extend only seventeen years from the date of the foreign patent.

Of Assignments and Grants.

The assignee of any invention may have the patent issue to him directly; but this is held to apply only to assignees of entire interests.

Although when the inventor assigns his *entire* interest to two or more, a patent will issue to them jointly, still, if he yet retain a portion in himself, a joint patent will not be issued to him and them; the inventor, however, may make himself an assignee of a part interest of his invention.

An inventor can assign his entire right before a patent is obtained, so as to enable the assignee to take out a patent in his own name; but the assignment must first be recorded and the specification sworn to by the inventor.

After a patent is obtained, the patentee may grant the right to make or use the thing patented in any specified portion of the United States.

Every assignment or grant should be recorded within three months from its date ; but if recorded after that time, it will protect the assignee or grantee against any one purchasing after the assignment or grant is placed on record.

When the patent is to issue in the name of the assignee, the entire correspondence should be in his name.

The receipt of assignments is not generally acknowledged by the office. They will be recorded in their turn within a few days after their reception, and then transmitted to persons entitled to them. A five-cent stamp, cancelled, is required on every assignment, and on every oath and every certificate attached thereto.

Form of Assignment of the entire Interest in Letters Patent before obtaining the same, and to be recorded preparatory thereto.

Whereas I, Jethro Wood, of Scipio, in the county of Cayuga, and State of New-York, have invented certain new and useful improvements in ploughs, for which I am about to make application for letters patent of the United States ; and whereas David Peacock, of Burlington, New-Jersey, has agreed to purchase from me all the right, title, and interest which I have, or may have, in and to the said invention, in consequence of the grant of letters patent therefor, and has paid to me, the said Wood, the sum of five thousand dollars, the receipt of which is hereby acknowledged : Now this indenture witnesseth, that, for and in consideration of the said sum to me paid, I have assigned and transferred, and do hereby assign and transfer, to the said David Peacock, the full and exclusive right to all the improvements made by me, as fully set forth and described in the specification which I have prepared and executed preparatory to the obtaining of letters patent therefor. And I do hereby authorize and request the Commissioner of Patents to issue the said letters patent to the said David Peacock, as the assignee of my whole right and title thereto, for the

sole use and behoof of the said David Peacock and his legal representatives.

In testimony whereof, I have hereunto set my hand and affixed my seal this 16th day of February, 1856.

JETHRO WOOD. [SEAL.]

Sealed and delivered in presence of—

GEORGE CLYMER,
DAVID RITTENHOUSE.

Form of a Grant of a Partial Right in a Patent.

Whereas I, Jethro Wood, of Scipio, in the county of Cayuga, and State of New-York, did obtain letters patent of the United States for certain improvements in ploughs, which letters patent bear date the 1st day of March, 1855; and whereas David Peacock, of Burlington, New-Jersey, is desirous of acquiring an interest therein: Now this indenture witnesseth, that for and in consideration of the sum of two thousand dollars, to me in hand paid, the receipt of which is hereby acknowledged, I have granted, sold, and set over, and do hereby grant, sell, and set over, unto the said David Peacock, all the right, title, and interest which I have in the said invention, as secured to me by said letters patent, for, to, and in the several States of New-York, New-Jersey, and Pennsylvania, and in no other place or places; the same to be held and enjoyed by the said David Peacock, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said letters patent are granted, (if it is intended to grant for any extended term, then add—and for the term of any extension thereof,) as fully and entirely as the same would have been held and enjoyed by me had this grant and sale not been made.

In testimony whereof, I have hereunto set my hand and affix my seal this sixteenth day of February, 1856.

JETHRO WOOD. [SEAL.]

Sealed and delivered in presence of—

JACOB PERKINS,
BENJAMIN FRANKLIN.

[Records of the title or ownership in patents are kept at Washington. Persons who wish to have searches made should address MUNN & Co., 37 Park Row. See "Other Information," page 7.]

Stamps.

Revenue stamps must be attached as follows:

A stamp of the value of *fifty cents* is required upon each power of attorney authorizing an attorney or agent to transact business with this office relative to an application for a patent.

No assignment directing a patent to issue to an assignee or assignees will be recognized by the Patent Office unless every sheet or piece of paper upon which such an assignment shall be written shall have affixed thereto a stamp of the value of *five cents*.

A stamp of the value of five cents is required upon each certificate of a magistrate.

Rules of Correspondence.

All correspondence must be in the name of the Commissioner of Patents; and all letters and other communications intended for the office must be addressed to him. If addressed to any of the other officers, they will not be noticed, unless it should be seen that the mistake was owing to inadvertence. A separate letter should in every case be written in relation to each distinct subject of inquiry or application, the subject of the invention and the date of filing being always carefully noted.

When an agent has filed his power of attorney, duly executed, the correspondence will, in ordinary cases, be held with him only. A double correspondence with him and his principal, if generally allowed, would largely enhance the labor of the office. For the same reason, the assignee of the entire interest in an invention is alone entitled to hold correspondence with the Office, to the exclusion of the inventor. If the principal becomes dissatisfied, he must revoke his power of attorney, and notify the Office, which will then communicate with him.

Of the Filing and Preservation of Papers.

All claims and specifications filed in the office (including amendments) must be written in a fair, legible hand, without interlineations or erasures, except such as are clearly stated in a marginal or foot-note written on the same sheet of paper ; or, failing in which, the office may require them to be printed.

All papers filed in the office will be regarded as permanent records of the office, and must never, on any account, be changed, further than to correct mere clerical mistakes.

Of giving or withholding Information.

Aside from the caveats, which are required by law to be kept secret, all pending applications are, as far as practicable, preserved in like secrecy. No information will therefore be given those inquiring whether any particular case is before the office, or whether any particular person has applied for a patent.

But if a party whose application has been rejected allows the matter to rest for two years without taking any further steps therein, he will be regarded as having abandoned his application, so far at least that it will no longer be protected by any rule of secrecy. The specification, drawings, and model will then be subject to inspection in the same manner as those of patented or withdrawn applications.

Information in relation to pending cases is given so far as it becomes necessary in conducting the business of the Office, but no further. Thus, when an interference is declared between two pending applications, each of the contestants is entitled to a knowledge of so much of his antagonist's case as to enable him to conduct his own understandingly.

Where the rejection of an application is founded upon another case previously rejected, but not withdrawn or abandoned, the rejected applicant will be furnished with all information in relation to the previously rejected case which is necessary for the proper understanding and management of his own.

When an applicant claims a certain device, and the same device is found *described* but not *claimed* in another pending application which was previously filed, information of the

filling of such second application is always given to the prior applicant, with a suggestion that if he desires to claim a patent for that device, he should forthwith modify his specification accordingly.

But where the application, which thus describes a device without claiming it, is subsequent in date to that wherein such device is claimed, the general rule is, that no notice of the claim in the previous application is given to the subsequent applicant. But where there are any special reasons to doubt whether the prior applicant is really the inventor of the device claimed, or where there are any other peculiar and sufficient reasons for departing from the rule above stated, the Office reserves to itself the right of so doing without its being regarded as a departure from the established rule.

The Office cannot respond to inquiries as to the novelty of an alleged invention, in advance of an application for a patent, nor to inquiries founded upon brief and imperfect descriptions propounded with a view of ascertaining whether such alleged improvements have been patented, and if so, to whom; nor can it act as an expounder of the patent law, nor as counsellor for individuals.

☞ The reader will bear in mind that the foregoing are the official rules for doing business at the Patent Office.

Inquiries as to the novelty of inventions may be addressed to MUNN & Co., 37 Park Row, N. Y. See pages 5 and 6.

Base all your actions upon a principle of right; preserve your integrity of character, and in doing this never reckon on the cost.

THE world estimates men by their success in life, and, by general consent, success is evidence of superiority.

Arsenic volatilizes before it fuses, and antimony melts a little below redness. Professor Draper thinks he has shown that all substances become red at the same point—1003 degrees Fahrenheit.

MODELS.

It is always better for inventors to have their models constructed under their own supervision, even at an increased cost in money or time. During the making of the model, the inventor often perceives points where important changes can be made, or where the invention may be rendered more perfect than was at first contemplated.

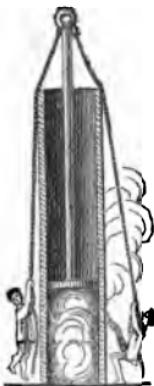
But in some instances, owing to residence in distant parts or other causes, it is impossible for the inventor to furnish a model. In such cases, we (MUNN & Co.) can have proper models built by experienced and trusty makers, at moderate charges.

TRACING PAPER.

OPEN a quire of double crown tissue-paper, and brush the first sheet with a mixture of mastic varnish and oil of turpentine, equal parts; proceed with each sheet similarly, and dry them on lines by hanging them up singly. As the process goes on, the under sheets absorb a portion of the varnish, and require less than if single sheets were brushed separately. The inventor of this varnish for tracing-paper received a medal and premium from the Royal Society. It leaves the paper quite light and transparent, it may readily be written on, and drawings traced with a pen are permanently visible. Used by learners to draw out lines. The paper is placed on the drawing, which is clearly seen, and an outline is made, taking care to hold the tracing-paper steady. In this way, elaborate drawings are easily copied.

ALCOHOL has more than double the expansive force of water of the same temperature. The steam of alcohol at 174° is equal to that of water at 212° . When proper means can be invented for saving the fluid from being lost, it is supposed that alcohol can be employed with advantage as the moving power for engines.

VOICE OF THE PEOPLE.



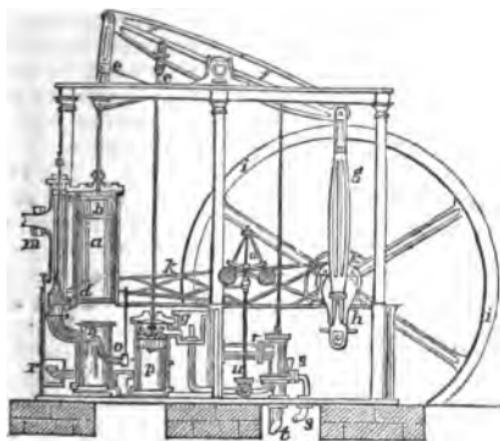
We might fill several volumes with flattering testimonials from all parts of the world, certifying to the great value of THE SCIENTIFIC AMERICAN, but the limits of this little book only permit us to make a few selections. Read the following :

MESSRS. EDITORS : Since I had the pleasure of receiving the back numbers of your interesting and instructive journal, I have shown specimens to several influential manufacturers and intelligent mechanics in this vicinity. One man told me that he had *twice* obtained five dollars for *a single recipe* that he copied out of THE SCIENTIFIC AMERICAN, which he has taken regularly for several years ; and I presume this is not an isolated case, by many hundreds. It is just such journals as yours that are annually condensed into encyclopedias, the compilers of which roughly scoop off the cream of all the new discoveries in science and art that have been recorded in the columns of various periodicals during the year ; but the facts set forth in such annual works are often so mutilated or distorted in the condensation, and so meagre in outline, as to be practically of no value. Every mechanic and farmer in the land should subscribe for THE SCIENTIFIC AMERICAN, not only for his own benefit, but also that of his children ; he may have a Franklin or a Fulton, a West or a Watt, in that little marble-player whom he pets in his leisure hours ; and the natural bias of the child's mind toward mechanical or agricultural pursuits requires to be confirmed or further developed by intellectual nourishment of such a quality and quantity as can be derived only from a journal like your own.

Never make money at the expense of your reputation.
Say but little—think much and do more.
Avoid borrowing and lending.

THE STEAM-ENGINE.

EVERY mechanic and inventor should make himself generally familiar with the construction and operation of the steam-engine. To assist them in gaining this knowledge, we subjoin for reference a diagram of the common Condensing Engine, with letters of reference to the names of the various parts :



a, steam cylinder ; *b*, piston ; *c*, upper steam port or passage ; *d*, lower steam port ; *e e*, parallel motion ; *f f*, beam ; *g*, connecting rod ; *h*, crank ; *i i*, fly-wheel ; *k k*, eccentric and its rod for working the steam-valve ; *l*, steam-valve and casing ; *m*, throttle-valve ; *n*, condenser ; *o*, injection-cock ; *p*, air-pump ; *q*, hot well ; *r*, shifting-valve to create vacuum in condenser previous to starting the engine ; *s*, feed-pump to supply boilers ; *t*, cold-water pump to supply condenser ; *u*, governor. A study of the above diagram and description, in connection with attentive observation of engines in motion, will be of much assistance in acquiring a general understanding of the machine. We recommend the follow-

ing standard works for careful study by all who desire to become thoroughly posted: Bourne's Catechism of the Steam-Engine, Main & Brown's Marine Steam-Engine.

[From The Scientific American.]

A HINT TO LETTER-WRITING BORES.



E consider, as a general thing, that our correspondents are a fair and high-minded set of men, such as we are most happy to accommodate by answering, so far as it is in our power, all their inquiries; but there are a few of whom we can very justly complain. They put to us all sorts of questions, to answer which might require a half-day of our valuable time; and if we snub them off with a short answer, they are likely to reply back in complaining terms. It cannot be reasonably expected of us, that we shall spend our time in such—to us—profitless letter-writing. We mean to be accommodating, but cannot consent to waste all our time in getting information for correspondents who seem not to know how to appreciate either our forbearance or the value of our time. As an example of what we mean, we have a case before us. A correspondent wants us to hunt through our files for a notice of some book which appeared in THE SCIENTIFIC AMERICAN some years ago, and to help him to find the book. He also wants us to find for him an English book which we do not believe can be had in this market. Another correspondent wants us to send to England without delay to get something which would require time and money to procure for him, but in regard to which he don't even inclose a three-cent stamp to pre-pay our letter. Another incloses three cents, and wants a calculation made which would cost us two hours' hard study. It is well enough for such correspondents to know that our time is worth to us more than a cent and a half per hour. Treat us fairly, and you will have no cause of complaint.

VOICE OF THE PRESS.



In examining the pages of our journal, we find them so covered with brilliant gems of commendation that it is difficult to select one which is more sparkling than another. We therefore take the following at random:

"The distinction achieved by the world-renowned

firm of Munn & Co., as Solicitors of Patents, is alike *deserved* and commanding—deserved, because they have spared no effort nor expense since they entered upon their responsible vocation—commanding, because it is a distinction supported and upheld by all the scientific appliances within the reach of modern enterprise, and carries along with it a *prestige* which we in vain look for in the history of any similar firm. To the scores of inventors who are to be met with in this State—and especially to those among them whose diffidence may have hitherto restrained them from giving their discoveries to the world—we would say, by all means consult the firm of Messrs. Munn & Co., 37 Park Row, New-York, confident, as we feel, that by so doing (should your inventions possess merit) you will not only put yourself in the way of securing a patent for the same, but at the same time reap the satisfaction of knowing that you have committed your claims to hands emphatically qualified successfully to carry them out. We have deemed it a *duty*, in this mode, to 'say our say' in regard to an Agency which, while, we trust, it has been able to make its highly important business *pay*, has, at the same time, nobly upheld the true principles of scientific investigation, scorning to make the latter in the least degree subservient to merely pecuniary considerations."—*Rahway (N. J.) Times and Register.*

A CUBIC foot of air weighs 523 grains—a little more than an ounce. A cubic foot of water weighs 1000 ounces.

FOREIGN PATENTS.



business and steam communication are such, that patents can be obtained abroad by our citizens almost as easily as at home.

Models are not required in any European country, but the utmost care and experience is necessary in the preparation of the specifications and drawings. A variety of small tax duties and other fees must be paid; many official formalities are also to be observed in obtaining foreign patents. It is therefore important that the applicant should place his business in the hands of established and reliable agents.

For the past twenty years, the majority of all patents taken out by Americans in foreign countries have been obtained through MUNN & Co.'s SCIENTIFIC AMERICAN PATENT AGENCY, and nearly all of this foreign patent business is still done by us. Our experience and success in this branch is very great.

The following summary will give a general idea of the expenses and duration of European Patents:

Great Britain.—Patents are granted for fourteen years to any person who is the inventor or the first importer. If a patent has been previously obtained in any other country, the British patent expires with it. The British patent extends over Great Britain and Ireland, but does not include

AMERICAN INVENTORS should bear in mind that, as a general rule, any invention which is valuable to the patentee in this country, is worth equally as much in England and some other foreign countries. Four patents—American, English, French, and Belgian—will secure an inventor exclusive monopoly to his discovery among *one hundred millions* of the most intelligent people in the world. The facilities of busi-

the Colonies. Separate patents are issued by the Colonies. The cost of a British patent is generally about \$350, of which \$100, for Provisional Protection, are payable at the time of making application, and the remainder in four months. Three years from the date of the patent a further sum of £50 must be paid, and a final sum of £100 at the end of seven years.

British Patents for designs, having reference to articles of utility, intended to protect the shape or configuration of the article, are granted for three years; expense, \$100.

France.—Term of the patent, fifteen years. Annual fees, \$20. Total expenses of obtaining, about \$150.

Belgium.—Term of the patent, twenty years. Small annual fees. Expense of obtaining, about \$150.

EXPENSE OF FOREIGN PATENTS — INCLUSIVE OF ALL FEES.

Austria,	\$250	Italy,	\$200
Australia,	250	Kingdom Two Siclies,	200
Bavaria,	150	Netherlands,	150
Belgium,	150	Poland,	150
Cuba,	250	Portugal,	150
Dutch West-Indies,	250	Prussia,	200
France,	150	Russia,	500
Great Britain,	350	Saxony,	100
Holland,	150	Spain,	400
India,	400	Sweden,	300

Parties intending to secure patents abroad will please address **MUNN & CO.**, 37 Park Row, New-York, and obtain their *pamphlet* (free) relating exclusively to Foreign Patents.

CAUTION.—Pay no attention to the solicitation of foreign agents of unknown responsibility, who send circulars to parties whose names they copy from the patent lists of **THE SCIENTIFIC AMERICAN**.

CLEAR, dry, cold air contains more oxygen, is more bracing to the human system, and is heavier than moist air. People are accustomed to say that the air on damp days feels heavy; but the truth is, the air is lighter, and therefore the blood is less oxydized, and the feelings consequently depressed.

HOW TO SELL PATENTS.



In the prefatory portion of this little work, we have presented hints upon the general success of inventors, and the great value of even the simplest inventions. But it must not be supposed, because a patent is granted, that the world will run after an unknown man to buy from him an unknown patent. In order to sell a patent, judicious effort is required on the part of the inventor or his agent. Indeed, his final success will depend, to a considerable extent, upon his business tact and energy. He should make himself thoroughly conversant with the merits of his invention, and

should prepare specimens or model machines thereof, made in the most perfect manner, so as readily to exhibit the operations of the improvement to others.

After obtaining a patent, the first grand requisite in effecting its sale is to make the merits and importance of the improvement *publicly known*. This may be done in various ways: by advertisements in newspapers, by cards, circulars, pamphlets, etc., by local and travelling agents. Some persons appoint agents in each town or county, giving them a liberal portion of the net proceeds for the sale of rights, or a handsome per cent upon the receipts for machines sold. In estimating the value of patent rights for different States, counties, etc., one very common method is to fix the price with reference to the amount of population.

One of the most comprehensive and powerful methods of bringing the merits of an invention before the public, is to have it noticed and engraved in **THE SCIENTIFIC AMERICAN**. This paper, published weekly, has a large circulation. It is seen by probably not less than one or two hundred thousand readers, who comprise all of the most intelligent persons of scientific and mechanical acquirements in the country. The fact of publication in **THE SCIENTIFIC AMER-**

ICAN is a passport to their attention and favor. It is upon the judgment and advice of scientific and mechanical persons that the purchasers of patent rights and new inventions are apt to rely. "Yes, that is a good invention. It has been well illustrated in THE SCIENTIFIC AMERICAN, and I fully understand its construction. I advise you to purchase the right." We suppose that more patents are sold upon such advice than by all other agencies and means put together.

To assist the sale, it is always advisable to have the patent taken out through the SCIENTIFIC AMERICAN AGENCY. The study necessary to the preparation of the specification and drawings familiarizes our minds with the merits of the invention, and as all worthy inventions patented by us are noticed in THE SCIENTIFIC AMERICAN, we are enabled to speak of them with some degree of authority.

We keep artists constantly employed in preparing engravings for THE SCIENTIFIC AMERICAN. All our engravings are original. We never print old cuts. Parties who desire to have engravings inserted in THE SCIENTIFIC AMERICAN will please address MUNN & Co., 37 Park Row, New-York. After publication, the engravings will be returned to the owner, who can then use them for other papers, circulars, etc.

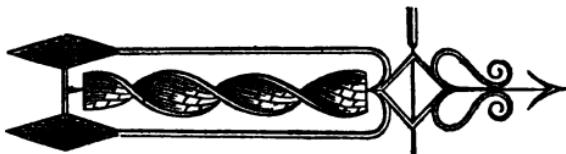
AGENTS TO SELL.

We are often asked to give the names of parties who make it a business to sell patents. We are rarely enabled to do so. Such concerns are generally quite fugitive in their character. An office is opened, signs displayed, a few customers engaged, and then suddenly the shop is closed. The truth is, that the profit upon the sales of a single good patent is equivalent to a fortune, and the business it furnishes is enough to fully engage the attention of many persons. Our advice to patentees is: Take hold of the business of selling yourselves. If you want assistance, search for agents among your friends, and interest them specially in your invention.

self, or give it to the world without price? The business man would say the former; because if notoriety be the object, great patents confer not only means, but distinction, and where the first is attained, the second follows.

[From The Scientific American.]

A SPARKLING VANE.



A VERY curious and elegant vane for buildings may be made by placing in the centre a spiral or twisted spindle, as shown in the above cut. This spindle should be hung on delicate pivots, and the spaces between the spiral flanches nearly covered with small pieces of looking-glass or thin pieces of mica. The least breeze will put it in motion, and as the reflectors will assume every possible position, several of them will be sure to present the reflection of the sun at every revolution, from whatever point it may be viewed, thus producing a constant and very brilliant sparkling.

ELECTRICAL CONDUCTING POWER OF METALS.

THE effect of the electrical discharge on metallic bodies is to raise their temperature to a less or greater degree, according to their conducting power. The best conductors are silver and copper; the poorest, lead; as will be seen from the subjoined table:

	Heat evolved.	Conducting Power.
Silver,	6	120
Copper,	6	120
Gold,	9	80
Zinc,	18	40
Platinum,	30	24
Iron,	30	24
Tin,	36	20
Lead,	72	12

[From The Scientific American.]

IMPORTANT TO INVENTORS.

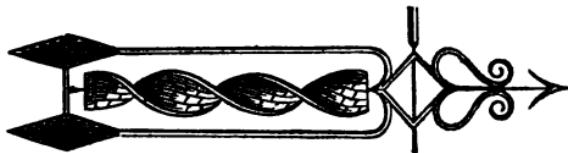
THE United States Patent Office at Washington contains nearly 50,000 models pertaining to patented inventions, all of which are open to public inspection and examination, together with the drawings and specifications relating thereto. But the distance of the Capital and the time and expense involved in a journey thither deter, in fact, the majority of inventors from reaping the advantages which a personal examination of previously patented inventions might oftentimes give them. To obviate this difficulty we (Munn & Co.) are in the habit of making these examinations at the Patent Office for inventors. When it is desired to ascertain definitely whether an invention, believed to be new, has been previously made, or to what extent, if any, it has been anticipated, the applicant sends to us a rough sketch and description of the device. We then make a thorough examination in the Patent Office at Washington, and report the result to the applicant. The charge for this service is only \$5, and it is frequently the means of saving the applicant the entire expense of preparing a model, paying Government fees, etc., by revealing the fact that the whole or material portion of his improvement was previously known. This preliminary examination is sometimes also of importance in assisting to properly prepare the papers, so as to avoid conflicting with other inventions in the same class. The reader should carefully note the distinction made between this preliminary examination at the Patent Office and the examination and opinion given at our office, either orally or by letter, for which no fee is expected. It is only when a special search is made at the Patent Office that the fee of \$5 is required. We are able, in a vast number of cases submitted to us, to decide the question of patentability without this special search. See page 6 of this little work.

WHEN the air is exhausted from a pump-tube, (usually done by means of a piston,) the pressure of the atmosphere will cause the water to rise in the tube to a height of thirty feet.

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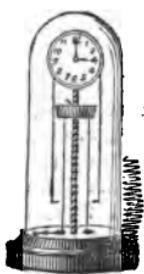
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“THE SCIENTIFIC AMERICAN.—We are sure that if a few words of seasonable commendation should induce any of that large class of intelligent readers who can appreciate true merit, to subscribe for this excellent publication, we shall be abundantly rewarded in the conviction of having earned their gratitude. It is only recently that we have looked into its columns with any degree of regularity, and we take an early opportunity to express the extreme satisfaction and interest which we have experienced in doing so. To condense our idea of its most valuable characteristic into one sentence, we consider THE SCIENTIFIC AMERICAN as embodying the highest function of all science, namely, its application to the practical, every-day concerns of life, in clear, pure, agreeable language. It will prove a pleasant guest and a useful companion at any fireside it may enter.”—*Watchman, Greenport, L. I.*

THE SCIENTIFIC AMERICAN ought to be taken, read, and studied by every intelligent man, young or old, worker or idler, rich or poor, in the country. It commends itself to every one, and is useful and interesting to all. The most scientific may learn from it, and the unscientific understand it. It has a peculiar charm about it that interests and affects every person with a grain of sense in his head. We are in the habit of sending our copy, after a thorough perusal, to the army, and the friend who receives it writes us, that he likes it better than any other paper; that it is longingly waited for, and eagerly read by his comrades, and never ceases its circulation until so begrimed that its columns are no longer readable.—*Westchester County Journal.*

Remember that, by subscribing to THE SCIENTIFIC AMERICAN, you receive, in the course of the year, an amount of reading matter nearly equal to *four thousand ordinary book pages.*

THE light of lightning and its reflections, will penetrate from 150 to 200 miles.

HORSE-POWER.

WHEN Watt began to introduce his steam-engines he wished to be able to state their power as compared with that of horses, which were then generally employed for driving mills. He accordingly made a series of experiments, which led him to the conclusion that the average power of a horse was sufficient to raise about 33,000 lbs. one foot in vertical height per minute, and this has been adopted in England and this country as the general measure of power.

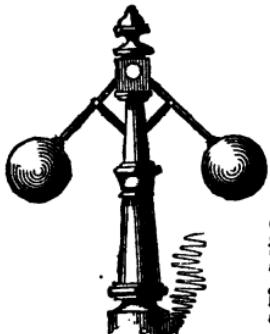
A waterfall has one horse-power for every 33,000 lbs. of water flowing in the stream per minute, for each foot of fall. To compute the power of a stream, therefore, multiply the area of its cross section in feet by the velocity in feet per minute, and we have the number of cubic feet flowing along the stream per minute. Multiply this by 62*1*/*2*, the number of pounds in a cubic foot of water, and this by the vertical fall in feet, and we have the foot-pounds per minute of the fall; dividing by 33,000 gives us the horse-power.

For example: A stream flows through a flume 10 feet wide, and the depth of the water is 4 feet; the area of the cross section will be 40 feet. The velocity is 150 feet per minute— $40 \times 150 = 6000$ —the cubic feet of water flowing per minute. $6000 \times 62\frac{1}{2} = 375,000$ —the pounds of water flowing per minute. The fall is 10 feet; $10 \times 375,000 = 3,750,000$ —the foot-pounds of the water-fall. Divide 3,750,000 by 33,000, and we have $113\frac{1}{3}$ as the horse-power of the fall.

The power of a steam-engine is calculated by multiplying together the area of the piston in inches, the mean pressure in pounds per square inch, the length of the stroke in feet, and the number of strokes per minute; and dividing by 33,000.

Water-wheels yield from 50 to 91 per cent of the water. The actual power of a steam-engine is less than the indicated power, owing to a loss from friction; the amount of this loss varies with the arrangement of the engine and the perfection of the workmanship.

ZUR BEACHTUNG FÜR DEUTSCHE ER-FINDER.



Die Unterzeichneten haben eine Anleitung herausgegeben, welche angiebt was zu befolgen ist um ein Patent zu sichern, und selbige wird auf portofreie Anfrage gratis abgegeben.

Nach dem neuen Patent-Gesetze können Bürger aller Länder, mit einer einzigen Ausnahme, Patente in den Vereinigten Staaten zu denselben Bedingungen erlangen, wie die Bürger der Vereinigten Staaten selbst.

Munn & Co.,
No. 37 Park Row, New-York.
Scientific American Office.

SOMETHING TO BE REMEMBERED.

AMERICAN Patents, granted to foreigners, become invalid, if the patent is not put and continued on sale, on reasonable terms, within eighteen months from the date of the patent. Law of 1836, section 15, page 61.

HEAT-CONDUCTING POWER OF DIFFERENT BODIES.

Gold,.....	1000	Tin,.....	804
Platinum,.....	981	Lead,.....	180
Silver,.....	973	Marble,.....	24
Copper,.....	898	Porcelain,.....	12
Iron,.....	874	Fire Clay,.....	11
Zinc,.....	868	Fire Brick,.....	11

RELATIVE CONDUCTING POWER OF FLUIDS.

Mercury,.....	1000	Proof Spirit,.....	812
Water,.....	857	Alcohol, (pure,).....	282

[From the *Scientific American.*]

FIELD FOR CHEMICAL INVENTION.

LESS than five per cent of all the patents issued are for chemical inventions. The first impression which this fact leaves is that the chemists are not so wide awake as the mechanics. And it seems, too, as if the chemists have the best chance, for they have the range of all the combinations, almost infinite in number, of all the sixty or more simple substances or elements, while the mechanic is limited in all his inventions to the use of only five mechanical elements. But this course of reasoning is a little unfair for the chemist, if we wish to determine his real merit as a benefactor of mankind. Thus far the introduction of new substances has been too slow and too much the result of chance. Illuminating gas was known as a chemical product for centuries before any use of it was made; iodine, chromine, chloroform, aniline, and a hundred other things, now common, were for a very long time only rare specimens on the shelves of the chemist's curiosity-shop, before they were found to be of the greatest value to men, and we cannot have a doubt that much more of the same kind of wealth is soon to be developed. May we not reasonably expect that virtues may be discovered in things now neglected, which will directly lead to the invention of arts more wonderful and more useful than photography or electro-telegraphing?

A correspondent, writing from Buffalo, says, in speaking of the value of THE SCIENTIFIC AMERICAN to its host of readers: "I would as soon think of going without supper on Thursday night as to neglect to call at the book-store for the *Paper of papers*; and I am proud to say that I have influenced many others to 'go and do likewise.' I have my volumes complete and nicely bound from volume five; and should poverty ever compel me to sell my library, my *Bible* and my SCIENTIFIC AMERICAN should remain to grace the otherwise empty shelves."

A WORD TO INQUIRERS.



We frequently receive letters containing long strings of trifling questions, relative to all sorts of things, without any fee to pay us for our time in obtaining the information, nor even stamps for postage or stationery. Many of these correspondents close their letters with the comforting assurance that "I would remit for your trouble, but do not know how much to send." To relieve the consciences of all such doubters, we would recommend them to send a dollar or more, according to the value to them of the desired information. If the latter is of no value, they ought not to trouble us with their fly-tracks.

To certain other classes of inquirers the following hints may be useful: The best washing-machines, the best straw-cutters, the best churning, the best brick-machines, the best engines, the best sewing-machines, the best of every thing in the mechanical line, is advertised and illustrated in **THE SCIENTIFIC AMERICAN**, and the address of the parties having such things on sale is there given. Write directly to them for the information you want, and spare us. If you cannot at first find what you desire, read the back numbers of **THE SCIENTIFIC AMERICAN**. Do not expect us to do the work for you unless you send a small remittance.

To find the area of an ellipsis, multiply the long diameter by the short diameter and by .7854; the product will be the area.

Never relate your misfortunes, and never grieve over what you cannot prevent.

To find the area of a circle, multiply the square of the diameter by the decimal .7854. Or multiply the circumference by the radius, and divide the product by 2.

THE
PATENT LAWS
OF THE
UNITED STATES OF AMERICA.

~~Es~~ The following are the existing Laws under which American Patents are granted and supported by the courts.

To save space we omit such portions as have been repealed, or that relate to salaries of officials, and other unimportant details not pertaining to patents.

PATENT LAW OF 1836.

AN ACT to promote the progress of Useful Arts, and to repeal all acts and parts of acts heretofore made for that purpose.

ESTABLISHMENT OF THE PATENT OFFICE.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That there shall be established and attached to the Department of State,* an office, to be denominated the Patent Office, the chief officer of which shall be called the Commissioner of Patents, to be appointed by the President, by and with the advice and consent of the Senate, whose duty it shall be, under the direction of the Secretary of State, to superintend, execute, and perform all such acts and things touching and respecting the granting and issuing of patents for new and useful discoveries, inventions, and improvements,

* Now attached to Department of Interior.

as are herein provided for, or shall hereafter be, by law, directed to be done and performed, and shall have charge and custody of all the books, records, papers, models, and machines, and all other things belonging to said office, * * * and shall be entitled to send and receive letters and packages by mail, relating to the business of the office, free of postage.

SEC. 2. [Relates to the appointment of clerks and other officials.]

PATENT OFFICE EMPLOYEES MUST NOT BE INTERESTED IN PATENTS.

* * * And said Commissioner, clerks, and every other person appointed and employed in said office, shall be disqualified and interdicted from acquiring or taking, except by inheritance, during the period for which they shall hold their appointments respectively, any right or interest, directly or indirectly, in any patent for an invention or discovery which has been, or may hereafter be, granted.

SEC 3. [Relates to oaths and sureties of clerks.]

SEAL OF OFFICE, COPYING, ETC.

SEC. 4. *And be it further enacted*, That the said Commissioner shall cause a seal to be made and provided for the said office, with such devices as the President of the United States shall approve; and copies of any records, books, papers, or drawings, belonging to the said office, under the signature of the said Commissioner, or, when the office shall be vacant, under the signature of the chief clerk, with the said seal affixed, shall be competent evidence in all cases in which the original records, books, papers, or drawings could be evidence. And any person making application therefor may have certified copies of the records, drawings, and other papers deposited in said office, on paying for the written copies the sum of ten cents for every page of one hundred words; and for copies of drawings, the reasonable expenses of making the same.

RECORD OF PATENTS, ETC.

SEC. 5. *And be it further enacted*, That all patents issuing from said office shall be issued in the name of the

United States, and under the seal of said office, and be signed by the Secretary of State,* and countersigned by the Commissioner of said office, and shall be recorded, together with the descriptions, specifications, and drawings, in the said office, in books to be kept for that purpose. Every such patent shall contain a short description or title of the invention or discovery, correctly indicating its nature and design, and in its terms grant to the applicant or applicants, his or their heirs, administrators, executors, or assigns, for a term not exceeding fourteen years, [changed to seventeen years,] the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention or discovery, referring to the specifications for the particulars thereof, a copy of which shall be annexed to the patent, specifying what the patentee claims as his invention or discovery.

WHO MAY OBTAIN PATENTS, AND HOW.

SEC. 6. *And be it further enacted*, That any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not at the time of his application for a patent in public use or on sale, with his consent or allowance, as the inventor or discoverer, and shall desire to obtain an exclusive property therein, may make application, in writing, to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor. But before any inventor shall receive a patent for any such new invention or discovery, he shall deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using, and compounding the same, in such full clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of

* Secretary of the Interior. See Section Law of 1849, page 72.

any machine, he shall fully explain the principle, and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery. He shall, furthermore, accompany the whole with a drawing or drawings, and written references, where the nature of the case admits of drawings; or with specimens of ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, where the invention or discovery is of a composition of matter; which descriptions and drawings, signed by the inventor, and attested by two witnesses, shall be filed in the Patent Office; and he shall, moreover, furnish a model of his invention, in all cases which admit of a representation by model, of a convenient size to exhibit advantageously its several parts. The applicant shall make oath or affirmation that he does verily believe that he is the original and first inventor or discoverer of the art, machine, composition, or improvement for which he solicits a patent; and that he does not know or believe that the same was ever before known or used; and also of what country he is a citizen; which oath or affirmation may be made before any person authorized by law to administer oaths.

OFFICIAL EXAMINATIONS.

SEC. 7. *And be it further enacted*, That on the filing of any such application, description, and specification, and the payment of the duty hereinafter provided,* the Commissioner shall make, or cause to be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country, prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale, with the ap-

* See Section 10, page 76.

plicant's consent or allowance, prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented or described in any printed publication in this or any foreign country as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him briefly such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification to embrace only that part of the invention or discovery which is new. * * *

INTERFERENCES.

SEC. 8. *And be it further enacted,* That whenever an application shall be made for a patent, which, in the opinion of the Commissioner, would interfere with any other patent for which an application may be pending, or with any unexpired patent which shall have been granted, it shall be the duty of the Commissioner to give notice thereof to such applicants or patentees, as the case may be; and if either shall be dissatisfied with the decision of the Commissioner on the question of priority of right or invention, on a hearing thereof, he may appeal from such decision, on the like terms and conditions as are provided in the preceding section of this act, and the like proceedings shall be had, to determine which, or whether either, of the applicants is entitled to receive a patent as prayed for. But nothing in this act contained shall be construed to deprive an original and true inventor of the right to a patent for his invention by reason of his having previously taken out letters patent therefor in a foreign country, and the same having been published at any time within six months next preceding the filing of his specification and drawings. * * *

SEC. 9. [Relates to patent fees. This section fixed the fee for American citizens at thirty dollars; subjects of Great Britain five hundred dollars, and all other persons three

hundred dollars. This was changed by the law of 1861, (see Section 10, page 76.) All persons, without distinction as to nationality, now pay thirty-five dollars, except the inhabitants of those countries that discriminate against American citizens. In Canada, an American cannot obtain patents. Hence Canadians are charged five hundred dollars for an American patent. It is expected that the Canadian law will be changed so as to remove this discrimination.]

THE HEIRS OF AN INVENTOR MAY OBTAIN A PATENT.

SEC. 10. *And be it further enacted*, That where any person hath made, or shall have made, any new invention, discovery, or improvement, on account of which a patent might by virtue of this act be granted, and such person shall die before any patent shall be granted therefor, the right of applying for and obtaining such patent shall devolve on the executor or administrator of such person, in trust for the heirs-at-law of the deceased, in case he shall have died intestate; but if otherwise, then in trust for his devisees, in as full and ample manner, and under the same conditions, limitations, and restrictions as the same was held, or might have been claimed or enjoyed, by such person in his or her lifetime; and when application for a patent shall be made by such legal representatives, the oath or affirmation provided in the 6th section of this act shall be so varied as to be applicable to them.

PATENTS MAY BE ASSIGNED.

SEC. 11. *And be it further enacted*, That every patent shall be assigned in law, either as to the whole interest or any undivided part thereof, by any instrument in writing; which assignment, and also every grant and conveyance of the exclusive right, under any patent, to make and use, and to grant to others to make and use, the thing patented within and throughout any specified part or portion of the United States, shall be recorded in the Patent Office within three months from the execution thereof. * * *

CAVEATS.

SEC. 12. *And be it further enacted*, That any citizen of the United States, or alien who shall have been a resident of the United States one year next preceding, and shall have made oath of his intention to become a citizen thereof, who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, may * * * file in the Patent Office a caveat setting forth the design and purpose thereof, and its principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention. * * * And such caveat shall be filed in the confidential archives of the office, and preserved in secrecy. And if application shall be made by any other person, within one year from the time of filing such caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the Commissioner to deposit the description, specifications, drawings, and model, in the confidential archives of the office, and to give notice (by mail) to the person filing the caveat of such application, *who shall within three months* after receiving the notice, if he would avail himself of the benefit of his caveat, file his description, specifications, drawings, and model; and if, in the opinion of the Commissioner, the specifications of claim interfere with each other, like proceedings may be had in all respects as are in this act provided in the case of interfering applications; *Provided, however*, That no opinion or decision * * * under the provisions of this act, shall preclude any person interested in favor of or against, the validity of any patent which has been or may hereafter be granted, from the right to contest the same in any judicial court, in any action in which its validity may come in question.

RE-ISSUES.

SEC. 13. *And be it further enacted*, That whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative or invalid, by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had or shall have a

right to claim as new, if the error has or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the Commissioner, upon the surrender to him of such patent, * * * to cause a new patent to be issued to the said inventor for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification.* And in case of his death or any assignment by him made of the original patent, a similar right shall vest in his executors, administrators, or assignees. And the patent so reissued, together with the corrected description and specifications, shall have the same effect and operation in law, on the trial of all actions hereafter commenced for causes subsequently accruing, as though the same had been originally filed in such corrected form, before the issuing of the original patent.* * * *

SUITS AT LAW.

SEC. 14. *And be it further enacted*, That whenever, in any action for damages [for] making, using, or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or by any patent which may hereafter be granted, a verdict shall be rendered for the plaintiff in such action, it shall be in the power of the court to render judgment of any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs; and such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name or names of the person or persons interested, whether as patentee, assignee, or as grantees of the exclusive right within and throughout a specified part of the United States.

SUITS AT LAW.—FOREIGN PATENTS INVALID IF THE INVENTION IS NOT PUT ON SALE WITHIN EIGHTEEN MONTHS FROM THE DATE OF PATENT.

SEC. 15. *And be it further enacted*, That the defendant in any such action shall be permitted to plead the general

* See Section 5, page 65.

States, granting or confirming to inventors the exclusive right to their inventions or discoveries, shall be originally cognizable, as well in equity as at law, by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court; which courts shall have power, upon a bill in equity filed by any party aggrieved, in any such case, to grant injunctions according to the course and principles of courts of equity, to prevent the violation of the rights of any inventor as secured to him by any law of the United States, on such terms and conditions as said courts may deem reasonable: *Provided, however,* That from all judgments and decrees from any such court rendered in the premises, a writ of error or appeal, as the case may require, shall lie to the Supreme Court of the United States, in the same manner and under the same circumstances as is now provided by law in other judgments and decrees of circuit courts, and in all other cases in which the court shall deem it reasonable to allow the same.

EXTENSION OF PATENTS.

SEC. 18. *And be it further enacted,* That whenever any patentee of an invention or discovery shall desire an extension of his patent beyond the term of its limitation,* he may make application therefor, in writing, to the Commissioner of the Patent Office, setting forth the grounds thereof; and the Commissioner shall * * * cause to be published in one or more of the principal newspapers in the City of Washington, and in such other paper or papers as he may deem proper, published in the section of country most interested adversely to the extension of the patent, a notice of such application, and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted. And the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury shall constitute a board † to hear and decide upon the evidence

* See Section 11, page 76, and Section 16, page 79.
† Repealed—See Section 1, page 71.

produced before them, both for and against the extension, and shall sit for that purpose at the time and place designated in the published notice thereof. The patentee shall furnish a statement, in writing, under oath, of the ascertained value of the invention, and of his receipts and expenditures, sufficiently in detail to exhibit a true and faithful account of loss and profit in any manner accruing to him from and by reason of said invention. And if, upon a hearing of the matter, it shall appear to the full and entire satisfaction of said [Commissioner], having due regard to the public interest therein, that it is just and proper that the term of the patent should be extended, by reason of the patentee, without neglect or fault on his part, having failed to obtain, from the use and sale of his invention, a reasonable remuneration for the time, ingenuity, and expense bestowed upon the same, and the introduction thereof into use, it shall be the duty of the Commissioner to renew and extend the patent, by making a certificate thereon of such extension, for the term of seven years from and after the expiration of the first term; * * * and thereupon the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years; and the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented, to the extent of their respective interests therein: *Provided, however,* That no extension of a patent shall be granted after the expiration of the term for which it was originally issued.

SEC. 19. [Relates to books, etc., for a library.]

SEC. 20. [Relates to the classification, and public exhibition of models, etc., in the Patent Office.]

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Approved July 4, 1836.

PATENT LAW OF 1837.

[Sections 1, 2, 3, 4, relate to means for obtaining new copies of the patents, records, and models, which were destroyed by the burning of the Patent Office in December, 1836. Only a small portion of the old patents and models were ever obtained under this act.]

A PATENT MAY BE DIVIDED INTO SEVERAL SEPARATE PATENTS.

SEC. 5. *And be it further enacted*, That whenever a patent shall be returned for correction and reissue, under the thirteenth section of the act [of 1836] to which this is additional, and the patentee shall desire several patents to be issued for distinct and separate parts of the thing patented, he shall first pay, in manner and in addition to the sum provided by that act, the sum of thirty dollars for each additional patent so to be issued.

ASSIGNMENTS, DRAWINGS, ETC.

SEC. 6. *And be it further enacted*, That any patent hereafter to be issued may be made and issued to the assignee or assignees of the inventor or discoverer, the assignment thereof being first entered of record, and the application therefor being duly made, and the specification duly sworn to by the inventor. And in all cases hereafter the applicant for a patent shall be held to furnish duplicate drawings, whenever the case admits of drawings, one of which to be deposited in the office, and the other to be annexed to the patent, and considered a part of the specification.

DISCLAIMERS.

SEC. 7. *And be it further enacted*, That whenever any patentee shall have, through inadvertence, accident, or mistake, made his specification of claim too broad, claiming more than that of which he was the original or first inventor, some material and substantial part of the thing patented being truly and justly his own, any such patentee, his administrators, executors, and assigns, whether of the whole or of a sectional interest therein, may make disclaimer of such parts of the thing patented as the disclaimant shall not

claim to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent; which disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office, on payment by the person disclaiming, in manner as other patent duties are required by law to be paid, of the sum of ten dollars. And such disclaimer shall thereafter be taken and considered as part of the original specification, to the extent of the interest which shall be possessed in the patent or right secured thereby, by the disclaimant, and by those claiming by or under him, subsequent to the record thereof. But no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing the same.

REISSUES

SEC. 8. *And be it further enacted,* That whenever application shall be made to the Commissioner for any addition of a newly discovered improvement to be made to an existing patent, or whenever a patent shall be returned for correction and reissue, the specification of claim annexed to every such patent shall be subject to revision and restriction, in the same manner as are original applications for patents; the Commissioner shall not add any such improvement to the patent in the one case, nor grant the reissue in the other case, until the applicant shall have entered a disclaimer, or altered his specification of claim in accordance with the decision of the Commissioner; and in all such cases the applicant, if dissatisfied with such decision, shall have the same remedy, and be entitled to the benefit of the same privileges and proceedings as are provided by law in the case of original applications for patents. [See change as to additional improvements, law of 1861, page 75, section 9.]

VALIDITY OF PARTS OF THE PATENT.

SEC. 9. *And be it further enacted,* (any thing in the fifteenth section of the act to which this is additional to the contrary notwithstanding,) That whenever, by mistake, accident, or inadvertence, and without any wilful default or intent to defraud or mislead the public, any patentee shall

have, in his specification, claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented, of which he was not the first and original inventor, and shall have no legal or just right to claim the same, in every such case the patent shall be deemed good and valid for so much of the invention or discovery as shall be truly and *bona fide* his own: *Provided*, It shall be a material and substantial part of the thing patented, and be definitely distinguishable from the other parts so claimed without right as aforesaid. And every such patentee, his executors, administrators, and assigns, whether of a whole or of a sectional interest therein, shall be entitled to maintain a suit at law or in equity on such patent for any infringement of such part of the invention or discovery as shall be *bona fide* his own as aforesaid, notwithstanding the specification may embrace more than he shall have any legal right to claim. But in every such case in which a judgment or verdict shall be rendered for the plaintiff, he shall not be entitled to recover costs against the defendant, unless he shall have entered at the Patent Office, prior to the commencement of the suit, a disclaimer of all that part of the thing patented which was so claimed without right: *Provided, however*, That no person bringing any such suit shall be entitled to the benefits of the provisions contained in this section who shall have unreasonably neglected or delayed to enter at the Patent Office a disclaimer as aforesaid.

SEC. 10. [Repealed. Related to model agents.]

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OATH OR AFFIRMATION.

SEC. 13. *And be it further enacted*, That in all cases in which an oath is required by this act, or by the act to which this is additional, if the person of whom it is required shall be conscientiously scrupulous of taking an oath, affirmation may be substituted therefor.

SEC. 14. [Relates to salaries and expenses of the Patent Office, Commissioner's report, etc.]

Approved March 3, 1837.

any machine, he shall fully explain the principle, and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery. He shall, furthermore, accompany the whole with a drawing or drawings, and written references, where the nature of the case admits of drawings; or with specimens of ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, where the invention or discovery is of a composition of matter; which descriptions and drawings, signed by the inventor, and attested by two witnesses, shall be filed in the Patent Office; and he shall, moreover, furnish a model of his invention, in all cases which admit of a representation by model, of a convenient size to exhibit advantageously its several parts. The applicant shall make oath or affirmation that he does verily believe that he is the original and first inventor or discoverer of the art, machine, composition, or improvement for which he solicits a patent; and that he does not know or believe that the same was ever before known or used; and also of what country he is a citizen; which oath or affirmation may be made before any person authorized by law to administer oaths.

OFFICIAL EXAMINATIONS.

SEC. 7. *And be it further enacted*, That on the filing of any such application, description, and specification, and the payment of the duty hereinafter provided,* the Commissioner shall make, or cause to be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country, prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale, with the ap-

* See Section 10, page 76.

plicant's consent or allowance, prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented or described in any printed publication in this or any foreign country as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him briefly such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification to embrace only that part of the invention or discovery which is new. * * *

INTERFERENCES.

Sec. 8. *And be it further enacted,* That whenever an application shall be made for a patent, which, in the opinion of the Commissioner, would interfere with any other patent for which an application may be pending, or with any unexpired patent which shall have been granted, it shall be the duty of the Commissioner to give notice thereof to such applicants or patentees, as the case may be; and if either shall be dissatisfied with the decision of the Commissioner on the question of priority of right or invention, on a hearing thereof, he may appeal from such decision, on the like terms and conditions as are provided in the preceding section of this act, and the like proceedings shall be had, to determine which, or whether either, of the applicants is entitled to receive a patent as prayed for. But nothing in this act contained shall be construed to deprive an original and true inventor of the right to a patent for his invention by reason of his having previously taken out letters patent therefor in a foreign country, and the same having been published at any time within six months next preceding the filing of his specification and drawings. * * *

Sec. 9. [Relates to patent fees. This section fixed the fee for American citizens at thirty dollars; subjects of Great Britain five hundred dollars, and all other persons three

hundred dollars. This was changed by the law of 1861, (see Section 10, page 76.) All persons, without distinction as to nationality, now pay thirty-five dollars, except the inhabitants of those countries that discriminate against American citizens. In Canada, an American cannot obtain patents. Hence Canadians are charged five hundred dollars for an American patent. It is expected that the Canadian law will be changed so as to remove this discrimination.]

THE HEIRS OF AN INVENTOR MAY OBTAIN A PATENT.

SEC. 10. *And be it further enacted*, That where any person hath made, or shall have made, any new invention, discovery, or improvement, on account of which a patent might by virtue of this act be granted, and such person shall die before any patent shall be granted therefor, the right of applying for and obtaining such patent shall devolve on the executor or administrator of such person, in trust for the heirs-at-law of the deceased, in case he shall have died intestate; but if otherwise, then in trust for his devisees, in as full and ample manner, and under the same conditions, limitations, and restrictions as the same was held, or might have been claimed or enjoyed, by such person in his or her lifetime; and when application for a patent shall be made by such legal representatives, the oath or affirmation provided in the 6th section of this act shall be so varied as to be applicable to them.

PATENTS MAY BE ASSIGNED.

SEC. 11. *And be it further enacted*, That every patent shall be assigned in law, either as to the whole interest or any undivided part thereof, by any instrument in writing; which assignment, and also every grant and conveyance of the exclusive right, under any patent, to make and use, and to grant to others to make and use, the thing patented within and throughout any specified part or portion of the United States, shall be recorded in the Patent Office within three months from the execution thereof. * * *

CAVEATS.

Sec. 12. *And be it further enacted*, That any citizen of the United States, or alien who shall have been a resident of the United States one year next preceding, and shall have made oath of his intention to become a citizen thereof, who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, may * * * file in the Patent Office a caveat setting forth the design and purpose thereof, and its principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention. * * * And such caveat shall be filed in the confidential archives of the office, and preserved in secrecy. And if application shall be made by any other person, within one year from the time of filing such caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the Commissioner to deposit the description, specifications, drawings, and model, in the confidential archives of the office, and to give notice (by mail) to the person filing the caveat of such application, *who shall within three months* after receiving the notice, if he would avail himself of the benefit of his caveat, file his description, specifications, drawings, and model; and if, in the opinion of the Commissioner, the specifications of claim interfere with each other, like proceedings may be had in all respects as are in this act provided in the case of interfering applications; *Provided, however*, That no opinion or decision * * * under the provisions of this act, shall preclude any person interested in favor of or against, the validity of any patent which has been or may hereafter be granted, from the right to contest the same in any judicial court, in any action in which its validity may come in question.

RE-ISSUES.

Sec. 13. *And be it further enacted*, That whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative or invalid, by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had or shall have a

right to claim as new, if the error has or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the Commissioner, upon the surrender to him of such patent, * * * to cause a new patent to be issued to the said inventor for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification.* And in case of his death or any assignment by him made of the original patent, a similar right shall vest in his executors, administrators, or assignees. And the patent so reissued, together with the corrected description and specifications, shall have the same effect and operation in law, on the trial of all actions hereafter commenced for causes subsequently accruing, as though the same had been originally filed in such corrected form, before the issuing of the original patent.* * * *

SUITS AT LAW.

SEC. 14. *And be it further enacted*, That whenever, in any action for damages [for] making, using, or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or by any patent which may hereafter be granted, a verdict shall be rendered for the plaintiff in such action, it shall be in the power of the court to render judgment of any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs; and such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name or names of the person or persons interested, whether as patentee, assignee, or as grantees of the exclusive right within and throughout a specified part of the United States.

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EXTENSION OF PATENTS.

SEC. 18. *And be it further enacted,* That whenever any patentee of an invention or discovery shall desire an extension of his patent beyond the term of its limitation,* he may make application therefor, in writing, to the Commissioner of the Patent Office, setting forth the grounds thereof; and the Commissioner shall * * * cause to be published in one or more of the principal newspapers in the City of Washington, and in such other paper or papers as he may deem proper, published in the section of country most interested adversely to the extension of the patent, a notice of such application, and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted. And the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury shall constitute a board † to hear and decide upon the evidence

* See Section 11, page 76, and Section 16, page 79.
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SEC. 19. [Relates to books, etc., for a library.]

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DISCLAIMERS.

SEC. 7. *And be it further enacted*, That whenever any patentee shall have, through inadvertence, accident, or mistake, made his specification of claim too broad, claiming more than that of which he was the original or first inventor, some material and substantial part of the thing patented being truly and justly his own, any such patentee, his administrators, executors, and assigns, whether of the whole or of a sectional interest therein, may make disclaimer of such parts of the thing patented as the disclaimant shall not

claim to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent; which disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office, on payment by the person disclaiming, in manner as other patent duties are required by law to be paid, of the sum of ten dollars. And such disclaimer shall thereafter be taken and considered as part of the original specification, to the extent of the interest which shall be possessed in the patent or right secured thereby, by the disclaimant, and by those claiming by or under him, subsequent to the record thereof. But no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing the same.

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VALIDITY OF PARTS OF THE PATENT.

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* See Section 10, page 76.

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INTERFERENCES.

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hundred dollars. This was changed by the law of 1861, (see Section 10, page 76.) All persons, without distinction as to nationality, now pay thirty-five dollars, except the inhabitants of those countries that discriminate against American citizens. In Canada, an American cannot obtain patents. Hence Canadians are charged five hundred dollars for an American patent. It is expected that the Canadian law will be changed so as to remove this discrimination.]

THE HEIRS OF AN INVENTOR MAY OBTAIN A PATENT.

SEC. 10. *And be it further enacted*, That where any person hath made, or shall have made, any new invention, discovery, or improvement, on account of which a patent might by virtue of this act be granted, and such person shall die before any patent shall be granted therefor, the right of applying for and obtaining such patent shall devolve on the executor or administrator of such person, in trust for the heirs-at-law of the deceased, in case he shall have died intestate; but if otherwise, then in trust for his devisees, in as full and ample manner, and under the same conditions, limitations, and restrictions as the same was held, or might have been claimed or enjoyed, by such person in his or her lifetime; and when application for a patent shall be made by such legal representatives, the oath or affirmation provided in the 6th section of this act shall be so varied as to be applicable to them.

PATENTS MAY BE ASSIGNED.

SEC. 11. *And be it further enacted*, That every patent shall be assigned in law, either as to the whole interest or any undivided part thereof, by any instrument in writing; which assignment, and also every grant and conveyance of the exclusive right, under any patent, to make and use, and to grant to others to make and use, the thing patented within and throughout any specified part or portion of the United States, shall be recorded in the Patent Office within three months from the execution thereof. * * *

CAVEATS.

SEC. 12. *And be it further enacted*, That any citizen of the United States, or alien who shall have been a resident of the United States one year next preceding, and shall have made oath of his intention to become a citizen thereof, who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, may * * * file in the Patent Office a caveat setting forth the design and purpose thereof, and its principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention. * * * And such caveat shall be filed in the confidential archives of the office, and preserved in secrecy. And if application shall be made by any other person, within one year from the time of filing such caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the Commissioner to deposit the description, specifications, drawings, and model, in the confidential archives of the office, and to give notice (by mail) to the person filing the caveat of such application, *who shall within three months* after receiving the notice, if he would avail himself of the benefit of his caveat, file his description, specifications, drawings, and model; and if, in the opinion of the Commissioner, the specifications of claim interfere with each other, like proceedings may be had in all respects as are in this act provided in the case of interfering applications; *Provided, however*, That no opinion or decision * * * under the provisions of this act, shall preclude any person interested in favor of or against, the validity of any patent which has been or may hereafter be granted, from the right to contest the same in any judicial court, in any action in which its validity may come in question.

RE-ISSUES.

SEC. 13. *And be it further enacted*, That whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative or invalid, by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had or shall have a

right to claim as new, if the error has or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the Commissioner, upon the surrender to him of such patent, * * * to cause a new patent to be issued to the said inventor for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification.* And in case of his death or any assignment by him made of the original patent, a similar right shall vest in his executors, administrators, or assignees. And the patent so reissued, together with the corrected description and specifications, shall have the same effect and operation in law, on the trial of all actions hereafter commenced for causes subsequently accruing, as though the same had been originally filed in such corrected form, before the issuing of the original patent.* * * *

SUITS AT LAW.

SEC. 14. *And be it further enacted,* That whenever, in any action for damages [for] making, using, or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or by any patent which may hereafter be granted, a verdict shall be rendered for the plaintiff in such action, it shall be in the power of the court to render judgment of any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs; and such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name or names of the person or persons interested, whether as patentee, assignee, or as grantees of the exclusive right within and throughout a specified part of the United States.

SUITS AT LAW.—FOREIGN PATENTS INVALID IF THE INVENTION IS NOT PUT ON SALE WITHIN EIGHTEEN MONTHS FROM THE DATE OF PATENT.

SEC. 15. *And be it further enacted,* That the defendant in any such action shall be permitted to plead the general

* See Section 5, page 65.

States, granting or confirming to inventors the exclusive right to their inventions or discoveries, shall be originally cognizable, as well in equity as at law, by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court; which courts shall have power, upon a bill in equity filed by any party aggrieved, in any such case, to grant injunctions according to the course and principles of courts of equity, to prevent the violation of the rights of any inventor as secured to him by any law of the United States, on such terms and conditions as said courts may deem reasonable: *Provided, however,* That from all judgments and decrees from any such court rendered in the premises, a writ of error or appeal, as the case may require, shall lie to the Supreme Court of the United States, in the same manner and under the same circumstances as is now provided by law in other judgments and decrees of circuit courts, and in all other cases in which the court shall deem it reasonable to allow the same.

EXTENSION OF PATENTS.

SEC. 18. *And be it further enacted,* That whenever any patentee of an invention or discovery shall desire an extension of his patent beyond the term of its limitation,* he may make application therefor, in writing, to the Commissioner of the Patent Office, setting forth the grounds thereof; and the Commissioner shall * * * cause to be published in one or more of the principal newspapers in the City of Washington, and in such other paper or papers as he may deem proper, published in the section of country most interested adversely to the extension of the patent, a notice of such application, and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted. And the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury shall constitute a board † to hear and decide upon the evidence

* See Section 11, page 76, and Section 16, page 79.
† Repealed—See Section 1, page 71.

produced before them, both for and against the extension, and shall sit for that purpose at the time and place designated in the published notice thereof. The patentee shall furnish a statement, in writing, under oath, of the ascertained value of the invention, and of his receipts and expenditures, sufficiently in detail to exhibit a true and faithful account of loss and profit in any manner accruing to him from and by reason of said invention. And if, upon a hearing of the matter, it shall appear to the full and entire satisfaction of said [Commissioner], having due regard to the public interest therein, that it is just and proper that the term of the patent should be extended, by reason of the patentee, without neglect or fault on his part, having failed to obtain, from the use and sale of his invention, a reasonable remuneration for the time, ingenuity, and expense bestowed upon the same, and the introduction thereof into use, it shall be the duty of the Commissioner to renew and extend the patent, by making a certificate thereon of such extension, for the term of seven years from and after the expiration of the first term; * * * and thereupon the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years; and the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented, to the extent of their respective interests therein: *Provided, however,* That no extension of a patent shall be granted after the expiration of the term for which it was originally issued.

SEC. 19. [Relates to books, etc., for a library.]

SEC. 20. [Relates to the classification, and public exhibition of models, etc., in the Patent Office.]

SEC. 21. [Relates to actions and cases sued or pending under previous laws.]

Approved July 4, 1836.

PATENT LAW OF 1837.

[Sections 1, 2, 3, 4, relate to means for obtaining new copies of the patents, records, and models, which were destroyed by the burning of the Patent Office in December, 1836. Only a small portion of the old patents and models were ever obtained under this act.]

A PATENT MAY BE DIVIDED INTO SEVERAL SEPARATE PATENTS.

SEC. 5. *And be it further enacted*, That whenever a patent shall be returned for correction and reissue, under the thirteenth section of the act [of 1836] to which this is additional, and the patentee shall desire several patents to be issued for distinct and separate parts of the thing patented, he shall first pay, in manner and in addition to the sum provided by that act, the sum of thirty dollars for each additional patent so to be issued.

ASSIGNMENTS, DRAWINGS, ETC.

SEC. 6. *And be it further enacted*, That any patent hereafter to be issued may be made and issued to the assignee or assignees of the inventor or discoverer, the assignment thereof being first entered of record, and the application therefor being duly made, and the specification duly sworn to by the inventor. And in all cases hereafter the applicant for a patent shall be held to furnish duplicate drawings, whenever the case admits of drawings, one of which to be deposited in the office, and the other to be annexed to the patent, and considered a part of the specification.

DISCLAIMERS.

SEC. 7. *And be it further enacted*, That whenever any patentee shall have, through inadvertence, accident, or mistake, made his specification of claim too broad, claiming more than that of which he was the original or first inventor, some material and substantial part of the thing patented being truly and justly his own, any such patentee, his administrators, executors, and assigns, whether of the whole or of a sectional interest therein, may make disclaimer of such parts of the thing patented as the disclaimant shall not

claim to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent; which disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office, on payment by the person disclaiming, in manner as other patent duties are required by law to be paid, of the sum of ten dollars. And such disclaimer shall thereafter be taken and considered as part of the original specification, to the extent of the interest which shall be possessed in the patent or right secured thereby, by the disclaimant, and by those claiming by or under him, subsequent to the record thereof. But no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing the same.

REISSUES

SEC. 8. *And be it further enacted*, That whenever application shall be made to the Commissioner for any addition of a newly discovered improvement to be made to an existing patent, or whenever a patent shall be returned for correction and reissue, the specification of claim annexed to every such patent shall be subject to revision and restriction, in the same manner as are original applications for patents; the Commissioner shall not add any such improvement to the patent in the one case, nor grant the reissue in the other case, until the applicant shall have entered a disclaimer, or altered his specification of claim in accordance with the decision of the Commissioner; and in all such cases the applicant, if dissatisfied with such decision, shall have the same remedy, and be entitled to the benefit of the same privileges and proceedings as are provided by law in the case of original applications for patents. [See change as to additional improvements, law of 1861, page 75, section 9.]

VALIDITY OF PARTS OF THE PATENT.

SEC. 9. *And be it further enacted*, (any thing in the fifteenth section of the act to which this is additional to the contrary notwithstanding,) That whenever, by mistake, accident, or inadvertence, and without any wilful default or intent to defraud or mislead the public, any patentee shall

have, in his specification, claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented, of which he was not the first and original inventor, and shall have no legal or just right to claim the same, in every such case the patent shall be deemed good and valid for so much of the invention or discovery as shall be truly and *bona fide* his own: *Provided*, It shall be a material and substantial part of the thing patented, and be definitely distinguishable from the other parts so claimed without right as aforesaid. And every such patentee, his executors, administrators, and assigns, whether of a whole or of a sectional interest therein, shall be entitled to maintain a suit at law or in equity on such patent for any infringement of such part of the invention or discovery as shall be *bona fide* his own as aforesaid, notwithstanding the specification may embrace more than he shall have any legal right to claim. But in every such case in which a judgment or verdict shall be rendered for the plaintiff, he shall not be entitled to recover costs against the defendant, unless he shall have entered at the Patent Office, prior to the commencement of the suit, a disclaimer of all that part of the thing patented which was so claimed without right: *Provided, however*, That no person bringing any such suit shall be entitled to the benefits of the provisions contained in this section who shall have unreasonably neglected or delayed to enter at the Patent Office a disclaimer as aforesaid.

SEC. 10. [Repealed. Related to model agents.]

SEC. 11. [Relates to clerks and copying.]

SEC. 12. [Relates to refunding of money in rejected cases, which by the law of 1861, section 9, is forbidden.]

OATH OR AFFIRMATION.

SEC. 13. *And be it further enacted*, That in all cases in which an oath is required by this act, or by the act to which this is additional, if the person of whom it is required shall be conscientiously scrupulous of taking an oath, affirmation may be substituted therefor.

SEC. 14. [Relates to salaries and expenses of the Patent Office, Commissioner's report, etc.]

Approved March 3, 1837.

PATENT LAW OF 1839.

SEC. 1, 2, 3, 4, 5, relate to employés at the Patent Office, expenses thereof, patent lists, and books.

FOREIGN INVENTIONS MAY BE PATENTED IF NOT PUBLICLY INTRODUCED PRIOR TO THE APPLICATION.

SEC. 6. *And be it further enacted*, That no person shall be debarred from receiving a patent for any invention or discovery, as provided in the act approved on the fourth day of July, one thousand eight hundred and thirty-six, to which this is additional, by reason of the same having been patented in a foreign country more than six months prior to his application: *Provided*, That the same shall not have been introduced into public and common use in the United States prior to the application for such patent: *And provided, also*, That in all cases every such patent shall be limited to the term of fourteen* years from the date or publication of such foreign letters patent.

MACHINES, ETC., MADE PRIOR TO THE PATENT MAY BE CONTINUED IN USE AFTER ISSUE OF THE PATENT.

SEC. 7. *And be it further enacted*, That every person or corporation who has, or shall have, purchased or constructed any newly invented machine, manufacture, or composition of matter, prior to the application by the inventor or discoverer for a patent, shall be held to possess the right to use, and vend to others to be used, the specific machine, manufacture, or composition of matter so made or purchased, without liability therefor to the inventor, or any other person interested in such invention; and no patent shall be held to be invalid by reason of such purchase, sale, or use, prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use, has been for more than two years prior to such application for a patent.

SEC. 8. [Relates to fees for recording, since changed.]

SEC. 9. [Relates to agricultural statistics.]

* Changed to seventeen years by the law of 1861. See page 79, section 16.

CONTESTED CASES.

SEC. 10. *And be it further enacted*, That the provisions of the sixteenth section of the before-recited act (law of 1836) shall extend to all cases where patents are refused for any reason whatever, either by the Commissioner of Patents or by the Chief-Justice of the District of Columbia, upon appeals from the decision of said Commissioner, as well as where the same shall have been refused on account of, or by reason of, interference with a previously existing patent; and in all cases where there is no opposing party a copy of the bill shall be served upon the Commissioner of Patents, when the whole of the expenses of the proceeding shall be paid by the applicant, whether the final decision shall be in his favor or otherwise.

APPEALS.

SEC. 11. *And be it further enacted*, That in cases where an appeal is now allowed by law from the decision of the Commissioner of Patents * * * the party, * * * shall have right to appeal to the Chief-Justice of the District Court of the United States for the District of Columbia, by giving notice thereof to the Commissioner, and filing in the Patent Office, within such time as the Commissioner shall appoint, his reasons of appeal, specifically set forth in writing, and also paying into the Patent Office, to the credit of the patent fund, the sum of twenty-five dollars. And it shall be the duty of said Chief-Justice, on petition, to hear and determine all such appeals, and to revise such decisions in a summary way, on the evidence produced before the Commissioner, at such early and convenient time as he may appoint, first notifying the Commissioner of the time and place of hearing, whose duty it shall be to give notice thereof to all parties who appear to be interested therein, in such manner as said judge shall prescribe. The Commissioner shall also lay before the said judge all the original papers and evidence in the case, together with the grounds of his decision, fully set forth in writing, touching all the points involved by the reasons of appeal, to which the revision shall be confined. And at the request of any party interested, or at the desire of the judge, the Commissioner

and the examiners in the Patent Officer may be examined, under oath, in explanation of the principles of the machine, or other thing, for which a patent in such case is prayed for. And it shall be the duty of the said judge, after a hearing of any such case, to return all the papers to the Commissioner, with a certificate of his proceedings and decision, which shall be entered of record in the Patent Office ; and such decision, so certified, shall govern the further proceedings of the Commissioner in such case: *Provided, however,* That no opinion or decision of the judge in any such case shall preclude any person interested in favor or against the validity of any patent which has been, or may hereafter be, granted, from the right to contest the same in any judicial court, in any action in which its validity may come in question.

SEC. 12. [Relates to rules in contested cases, and to examiners, but has been changed.]

SEC. 13. [Relates to fees to the justice.]

Approved March 3, 1839.

PATENT LAW OF 1842.

SECTION 1. [Authorizes the refunding of money paid by mistake in certain cases.]

SEC. 2. [Relates to patent records that were destroyed by fire in 1836.]

SEC. 3. [Repealed.]

TAKING THE OATH IN FOREIGN COUNTRIES.

SEC. 4. *And be it further enacted,* That the oath required for applicants for patents may be taken, when the applicant is not, for the time being, residing in the United States, before any minister plenipotentiary, chargé d'affaires, consul, or commercial agent holding commission under the government of the United States, or before any notary public of the foreign country in which such applicant may be.

PENALTY FOR STAMPING UNPATENTED ARTICLES.

SEC. 5. *And be it further enacted,* That if any person or persons shall paint, or print, or mould, cast, carve, or en-

issue, and to give this act and any special matter in evidence, of which notice in writing may have been given to the plaintiff or his attorney, thirty days before trial, tending to prove that the description and specification filed by the plaintiff does not contain the whole truth relative to his invention or discovery, or that it contains more than is necessary to produce the described effect; which concealment or addition shall fully appear to have been made for the purpose of deceiving the public, or that the patentee was not the original and first inventor or discoverer of the thing patented, or of a substantial and material part thereof claimed as new, or that it has been described in some public work anterior to the supposed discovery thereof by the patentee, or had been in public use or on sale with the consent and allowance of the patentee before his application for a patent, or that he had surreptitiously or unjustly obtained the patent for that which was in fact invented or discovered by another, who was using reasonable diligence in adapting and perfecting the same; or that the patentee, if an alien at the time the patent was granted, had failed and neglected, for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms, the invention or discovery for which the patent issued; and whenever the defendant relies in his defence on the fact of a previous invention, knowledge, or use of the thing patented, he shall state, in his notice of special matters, the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used; in either of which cases judgment shall be rendered for the defendant with costs: *Provided, however,* That whenever it shall satisfactorily appear that the patentee, at the time of making his application for the patent, believing himself to be the first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been before known or used in any foreign country; it not appearing that the same or any substantial part thereof had before been patented or described in any printed publication: *And provided, also,* That whenever the plaintiff shall fail to sustain his action on the ground that in his specification or claim is

embraced more than that of which he was the first inventor, if it shall appear that the defendant had used or violated any part of the invention justly and truly specified and claimed as new, it shall be in the power of the court to adjudge and award, as to costs, as may appear to be just and equitable.* * * *

PATENTS MAY BE DECLARED VOID.

SEC. 16. *And be it further enacted*, That whenever there shall be two interfering patents, or whenever a patent or application shall have been refused * * * on the ground that that patent applied for would interfere with an unexpired patent previously granted, any person interested in any such patent, either by assignment or otherwise in the one case, and any such applicant in the other case, may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties, and other due proceedings had, may adjudge and declare either the patents void in the whole or in part, or inoperative and invalid in any particular part or portion of the United States, according to the interest which the parties to such suit may possess in the patent or the inventions patented; and may also adjudge that such applicant is entitled, according to the principles and provisions of this act, to have and receive a patent for his invention, as specified in his claim, or for any part thereof, as the fact of priority of right or invention shall, in any such case, be made to appear. And such adjudication, if it be in favor of the right of such applicant, shall authorize the Commissioner to issue such patent, on his filing a copy of the adjudication, and otherwise complying with the requisitions of this act: *Provided, however*, That no such judgment or adjudication shall affect the rights of any person, except the parties to the action, and those deriving title from or under them subsequent to the rendition of such judgment.*

COURTS TO HAVE POWERS, ETC.

SEC. 17. *And be it further enacted*, That all actions, suits, controversies, and cases arising under any law of the United

* See Section 9, page 66.

grave, or stamp upon any thing made, used, or sold by him, for the sole making or selling which he hath not, or shall not have, obtained letters patent, the name, or any imitation of the name of any other person who hath, or shall have, obtained letters patent for the sole making and vending of such thing, without consent of such patentee, or his assigns or legal representatives; or if any person, upon any such thing not having been purchased from the patentee, or some person who purchased it from or under such patentee, or not having the license or consent of such patentee, or his assigns or legal representatives, shall write, paint, print, mould, cast, carve, engrave, stamp, or otherwise make or affix the word "patent," or the words "letters patent," or the word "patentee," or any word or words of like kind, meaning, or import, with the view or intent of imitating or counterfeiting the stamp, mark, or other device of the patentee, or shall affix the same, or any word, stamp, or device of like import, on any unpatented article, for the purpose of deceiving the public, he, she, or they, so offending, shall be liable for such offence to a penalty of not less than one hundred dollars, with costs, to be recovered by action in any of the circuit courts of the United States, or in any of the district courts of the United States having the powers and jurisdiction of a circuit court; one half of which penalty, as recovered, shall be paid to the patent fund, and the other half to any person who shall sue for the same.

SEC. 6. [Repealed.]

Approved August 29, 1842.

PATENT LAW OF 1848.

THE COMMISSIONER TO EXTEND PATENTS.

*Be it enacted, etc., * * * That the power to extend patents, shall hereafter be vested solely in the Commissioner of Patents; and when an application is made to him for the extension of a patent, * * * he shall refer the case to the principal examiner having charge of the class of inventions to which said case belongs, who shall make a full report to*

said Commissioner of the said case, and particularly whether the invention or improvement secured in the patent was new and patentable when patented ; * * * but no patent shall be extended for a longer term than seven years.

SEC. 2. [Relates to record fees—since changed.]

SEC. 3. [Relates to clerks and copying.]

SEC. 4. [Relates to Patent Reports, etc.]

Approved May 27, 1848.

PATENT LAW OF 1849.

And be it further enacted, That the Secretary of the Interior shall exercise and perform all the acts of supervision and appeal in regard to the office of Commissioner of Patents, now exercised by the Secretary of State.

PATENT LAW OF 1852.

JUDGES TO HEAR APPEALS.

Be it enacted, etc., That appeals provided for in the eleventh section of the act, (law of 1839,) * * * may also be made to either of the assistant judges of the Circuit Court of the District of Columbia ; and all the powers, duties, and responsibilities imposed by the aforesaid act, and conferred upon the chief judge, are hereby imposed and conferred upon each of the said assistant judges.

SEC. 2. *And be it further enacted,* That in case appeal shall be made to the said chief judge, or to either of the said assistant judges, the Commissioner of Patents shall pay to such chief judge, or assistant judge, the sum of twenty-five dollars, required to be paid by the appellant into the Patent Office by the eleventh section of said act, on said appeal.

SEC. 3. [Repeals a former section relating to a fee to the justice.]

Approved August 30, 1852.

PATENT LAW OF 1861.

COMMISSIONER TO ISSUE SUBPOENAS, ETC.

Be it enacted, etc., That the Commissioner of Patents may establish rules for taking affidavits and depositions required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any justice of the peace or other officer authorized by law to take depositions to be used in the courts of the United States, or in the State courts of any State where such officer shall reside; and in any contested case pending in the Patent Office it shall be lawful for the clerk of any court of the United States for any district or Territory, and he is hereby required, upon the application of any party to such contested case, or the agent or attorney of such party, to issue subpoenas for any witnesses residing or being within the said district or Territory, commanding such witnesses to appear and testify before any justice of the peace, or other officer as aforesaid, residing within the said district or Territory, at any time and place in the subpoena to be stated; and if any witness, after being duly served with such subpoena, shall refuse or neglect to appear, or, after appearing, shall refuse to testify, (not being privileged from giving testimony,) such refusal or neglect being proved to the satisfaction of any judge of the court whose clerk shall have issued such subpoena, said judge may thereupon proceed to enforce obedience to the process, or to punish the disobedience in like manner as any court of the United States may do in case of disobedience to process of *subpoena ad testificandum* issued by such court; and witnesses in such cases shall be allowed the same compensation as is allowed to witnesses attending the courts of the United States: *Provided*, That no witness shall be required to attend at any place more than forty miles from the place where the subpoena shall be served upon him to give a deposition under this law: *Provided also*, That no witness shall be deemed guilty of contempt for refusing to disclose any secret invention made or owned by him: *And provided, further*, That no witness shall be deemed guilty of contempt for disobeying any subpoena directed to him by virtue of this act, unless his fees for going to, returning

from, and one day's attendance at the place of examination shall be paid or tendered him at the time of the service of the subpoena.

EXAMINERS-IN-CHIEF.

SEC. 2. And be it further enacted, That for the purpose of securing greater uniformity of action in the grant and refusal of letters patent, there shall be appointed by the President, by and with the advice and consent of the Senate, three examiners-in-chief, at an annual salary of three thousand dollars each, to be composed of persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the applicant for that purpose being filed, to revise and determine upon the validity of decisions made by examiners when adverse to the grant of letters patent; and also to revise and determine in like manner upon the validity of the decisions of examiners in interference cases, and when required by the Commissioner in applications for the extension of patents, and to perform such other duties as may be assigned to them by the Commissioner; that from their decisions appeals may be taken to the Commissioner of Patents in person, upon payment of the fee hereinafter prescribed; that the said examiners-in-chief shall be governed in their action by the rules to be prescribed by the Commissioner of Patents.

SEC. 3. And be it further enacted. That no appeal shall be allowed to the examiners-in-chief from the decisions of the primary examiners, except in interference cases, until after the application shall have been twice rejected. * * *

SEC. 4. [Relates to salaries.]

RETURN OF MODELS.

SEC. 5. And be it further enacted, That the Commissioner of Patents is authorized to restore to the respective applicants, or when not removed by them, to otherwise dispose of such of the models belonging to rejected applications as he shall not think necessary to be preserved. The same authority is also given in relation to all models accompanying applications for designs. He is further authorized to

dispense in future with models of designs when the design can be sufficiently represented by a drawing.

Sec. 6. [Repeals agencies for models.]

Sec. 7. [Relates to clerks.]

PAPERS MUST BE PROPERLY PREPARED.

Sec. 8. *And be it further enacted,* That the Commissioner may require all papers filed in the Patent Office, if not correctly, legibly, and clearly written, to be printed at the cost of the parties filing such papers ; and for gross misconduct he may refuse to recognize any person as a patent agent, either generally or in any particular case ; but the reasons of the Commissioner for such refusal shall be duly recorded, and subject to the approval of the President of the United States.

NO MONEY RETURNED ON REJECTED CASES.

Sec. 9. *And be it further enacted,* That no money paid as a fee on any application for a patent after the passage of this act shall be withdrawn or refunded ; nor shall the fee paid on filing a caveat be considered as part of the sum required to be paid on filing a subsequent application for a patent for the same invention.

That the three months' notice given to any caveatator in pursuance of the requirements of the twelfth section of the act of July fourth, eighteen hundred and thirty-six, shall be computed from the day on which such notice is deposited in the post-office at Washington, with the regular time for the transmission of the same added thereto, which time shall be indorsed on the notice ; and that so much of the thirteenth section of the act of Congress, approved July fourth, eighteen hundred and thirty-six, as authorizes the annexing to letters patent of the description and specification of additional improvements, is hereby repealed, and in all cases where additional improvements would now be admissible independent patents must be applied for.

SCHEDULE OF OFFICIAL FEES.

Sec. 10. *And be it further enacted,* That all laws now in force fixing the rates of the Patent Office fees to be paid,

and discriminating between the inhabitants of the United States and those of other countries which shall not discriminate against the inhabitants of the United States, are hereby repealed, and in their stead the following rates are established:

On filing each caveat, ten dollars.

On filing each original application for a patent, except for a design, fifteen dollars.

On issuing each original patent, twenty dollars.

On every appeal from the examiners-in-chief to the Commissioner, twenty dollars.

On every application for the reissue of a patent, thirty dollars.

On every application for the extension of a patent, fifty dollars; and fifty dollars, in addition, on the granting of every extension.

On filing each disclaimer, ten dollars.

For certified copies of patents and other papers, ten cents per hundred words.

For recording every assignment, agreement, power of attorney, and other papers, of three hundred words or under, one dollar.

For recording every assignment and other papers over three hundred and under one thousand words, two dollars.

For recording every assignment or other writing, if over one thousand words, three dollars.

For copies of drawings, the reasonable cost of making the same.

PATENTS FOR DESIGNS.

SEC. 11. *And be it further enacted*, That any citizen or citizens, or alien or aliens, having resided one year in the United States, and taken the oath of his or their intention to become a citizen or citizens, who by his, her, or their own industry, genius, efforts, and expense, may have invented or produced any new and original design for a manufacture, whether of metal or other material or materials, and original design for a bust, statue, or bas-relief, or composition in alto or basso relievo, or any new and original impression or ornament, or to be placed on any article of

manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture, to be either worked into or worked on, or printed or painted or cast, or otherwise fixed on any article of manufacture, or any new and original shape or configuration of any article of manufacture, not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor, and who shall desire to obtain an exclusive property or right therein to make, use, and sell, and vend the same, or copies of the same to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor, as in the case now of application for a patent, for for the term of three and one half years, or for the term of seven years, or for the term of fourteen years, as the said applicant may elect in his application: *Provided*, That the fee to be paid in such application shall be for the term of three years and six months, ten dollars; for seven years, fifteen dollars; and for fourteen years, thirty dollars: *And provided*, That the patentees of designs under this act shall be entitled to the extension of their respective patents, for the term of seven years from the day on which said patents shall expire, upon the same terms and restrictions as are now provided for the extension of letters patent.

APPLICATIONS MUST BE COMPLETED WITHIN TWO YEARS.

SEC. 12. *And be it further enacted*, That all applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof they shall be regarded as abandoned by the parties thereto, unless it be shown, to the satisfaction of the Commissioner of Patents, that such delay was unavoidable; and all applications now pending shall be treated as if filed after the passage of this act; and all applications for the extension of patents shall be filed at least ninety days before the expiration thereof, and notice of the day

set for the hearing of the case shall be published, as now required by law, for at least sixty days.

PATENTED ARTICLES TO BE STAMPED.

SEC. 13. *And be it further enacted*, That in all cases where an article is made or vended by any person under the protection of letters patent, it shall be the duty of such person to give sufficient notice to the public that said article is so patented, either by fixing thereon the word patented, together with the day and year the patent was granted, or when, from the character of the article patented, that may be impracticable, by enveloping one or more of the said articles, and affixing a label to the package, or otherwise attaching thereto a label, on which the notice, with the date, is printed; on failure of which, in any suit for the infringement of letters patent by the party failing so to mark the article the right to which is infringed upon, no damage shall be recovered by the plaintiff, except on proof that the defendant was duly notified of the infringement, and continued after such notice to make or vend the article patented. * * *

PATENTS MAY BE PRINTED.

SEC. 14. *And be it further enacted*, That the Commissioner of Patents be, and he is hereby, authorized to print, or in his discretion to cause to be printed, ten copies of the description and claims of all patents which may hereafter be granted, and ten copies of the drawings of the same, when drawings shall accompany the patents: *Provided*, The cost of printing the text of said descriptions and claims shall not exceed, exclusive of stationery, the sum of two cents per hundred words for each of said copies, and the cost of the drawing shall not exceed fifty cents per copy; one copy of the above number shall be printed on parchment, to be affixed to the letters patent; the work shall be under the direction, and subject to the approval, of the Commissioner of Patents, and the expense of the said copies shall be paid for out of the patent fund.

SEC. 15. *And be it further enacted*, That printed copies

of the letters patent of the United States, with the seal of the Patent Office affixed thereto, and certified and signed by the Commissioner of Patents, shall be legal evidence of the contents of said letters patents in all cases.

PATENTS GRANTED FOR SEVENTEEN YEARS. EXTENSIONS PROHIBITED.

SEC. 16. *And be it further enacted*, That all patents hereafter granted shall remain in force for the term of seventeen years from the date of issue; and all extension of such patents is hereby prohibited.

SEC. 17. *And be it further enacted*, That all acts and parts of acts heretofore passed, which are inconsistent with the provisions of this act, be, and the same are hereby, repealed.

Approved March 2, 1861.

PATENT LAW OF 1863.

SEC. 1. [Repeals the renewal of oath.]

SEC. 2. [Relates to clerks, etc.]

DATING OF PATENTS.

SEC. 3. *And be it further enacted*, That every patent shall be dated as of a day not later than six months after the time at which it was passed and allowed, and notice thereof sent to the applicant or his agent. And if the final fee for such patent be not paid within the said six months the patent shall be withheld, and the invention therein described shall become public property as against the applicant therefor: * *Provided*, That, in all cases where patents have been allowed previous to the passage of this act, the said six months shall be reckoned from the date of such passage.

Approved March 3, 1863.

* Modified. See law of 1865.

PATENT LAW OF 1865**FORFEITED APPLICATIONS MAY BE REVIVED.**

Be it enacted, That any person having an interest in an invention, whether as inventor or assignee, for which a patent was ordered to issue upon the payment of the final fee, as provided in section three of an act approved March third, eighteen hundred and sixty-three, but who failed to make payment of the final fee, as provided in said act, shall have the right to make an application for a patent for his invention, the same as in the case of an original application, provided such application be made within two years after the date of the allowance of the original application: *Provided*, that nothing herein shall be so construed as to hold responsible in damages any persons who have manufactured or used any article or thing for which a patent aforesaid was ordered to issue.

This act shall apply to all cases now in the Patent Office, and also to such as shall hereafter be filed; and all acts or parts of acts inconsistent with this act are hereby repealed.

Approved, March 3, 1865.

PATENT LAW OF 1866.**APPEALS TO THE EXAMINERS-IN-CHIEF.**

Be it enacted, That upon appealing for the first time from the decision of the primary examiner to the examiners-in-chief in the Patent Office, the appellant shall pay a fee of ten dollars into the Patent Office to the credit of the Patent fund; and no appeal from the primary examiner to the examiners-in-chief shall hereafter be allowed until the appellant shall pay said fee.

Approved, June 27, 1866.

The yearly official Reports of the Patent Office are distributed gratuitously to the public, on application to members of Congress. The Reports are not sold by the government.

[From The Scientific American.]

RELATING TO PATENTS.



T may be well for parties who are interested in new inventions to remember that our firm of Munn & Co. have taken out far more patents, and have, therefore, had much greater experience in the profession, than any other agency in the world. Those who confide their business to us may therefore rely upon having it done in the best manner on the most moderate terms.

In addition to these advantages, we make it a general rule to assist the interest of our clients by giving publicity in the form of editorial notices, of all the new and meritorious inventions that are patented through our agency. The fact that we have carefully studied these improvements during the process of preparing the patent papers, enables us to speak knowingly in regard to their best features. The publicity thus given to inventions, owing to the immense circulation of **THE SCIENTIFIC AMERICAN** among intelligent readers, is often of the utmost benefit to patentees. In some cases it has engaged the active coöperation of enterprising capitalists and manufacturers, in patents which otherwise would have remained dead, and has resulted in the most important pecuniary advantages to inventors and patentees, as hundreds of them are ready to testify; although the sum total of our charges for preparing their patent papers has rarely exceeded the small amount of twenty-five dollars. Whatever carping, jealous, or envious persons, or little agents, may say to the contrary, we are justified in affirming that all who really wish to promote their own interests will do well to employ **THE SCIENTIFIC AMERICAN PATENT AGENCY**.

PROPERTIES OF CHARCOAL.

ALTHOUGH charcoal is so combustible, it is, in some respects a very unchangeable substance, resisting the action of a great variety of other substances upon it. Hence posts are often charred before being put into the ground. Grain has been found in the excavations at Herculaneum, which was charred at the time of the destruction of that city, eighteen hundred years ago, and yet the shape is perfectly preserved, so that you can distinguish between the different kinds of grain. While charcoal is itself so unchangeable, it preserves other substances from change. Hence meat and vegetables are packed in charcoal for long voyages, and the water is kept in casks which are charred on the inside. Tainted meat can be made sweet by being covered with it. Foul and stagnant water can be deprived of its bad taste by being filtered through it. Charcoal is a great decolorizer. Ale and porter filtered through it are deprived of their color, and sugar-refiners decolorize their brown syrups by means of charcoal, and thus make white sugar. Animal charcoal, or bone-black, is the best for such purposes, although only one-tenth of it is really charcoal, the other nine-tenths being the mineral portion of the bone.

Charcoal will absorb, of some gases, from eighty to ninety times its own bulk. As every point of its surface is a point of attraction, it is supposed to account for the enormous accumulation of gases in the spaces of the charcoal. But this accounts for it only in part. There must be some peculiar power in the charcoal to change, in some way, the condition of a gas of which it absorbs ninety times its own bulk.—*Hooker.*

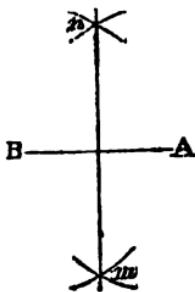
SUBSTITUTE FOR THE CRANK.

VARIOUS devices supposed to have advantages over the common crank, have been invented. Our diagram shows one of these forms, which has been re-invented many times, by different inventors. A grooved wheel is employed, and in the groove are two slides, attached respectively, by pivots, to the connecting rod of a piston rod. The reciprocating movement of the piston rod acting upon the connecting rod, causes the rotation of the wheel.

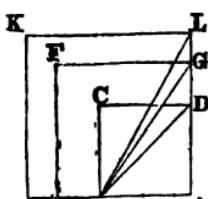


PRACTICAL GEOMETRY.

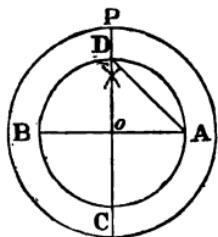
A KNOWLEDGE of geometry, both practical and theoretical, is of importance to mechanics and inventors. It is promotive of truth and patience in mental habits, and leads to the exercise of nicety and exactness in the execution of mechanical labors. With a pair of dividers, a rule and pencil, any person may speedily acquire a considerable knowledge of practical geometry. We subjoin a few simple and generally useful problems for practice, in the hope of thus interesting some of our readers in the subject, so that they will continue the study. Complete works on geometry can be had at the book-stores.



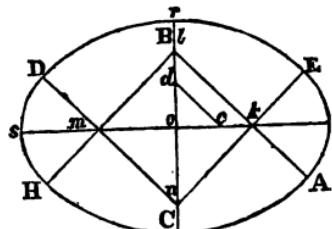
Problem 1.—To divide a line into equal parts.—To draw a line perpendicular to another: With a pair of dividers from the extremities of the line A B as centres, with any distance exceeding the point where the line is to be intersected, describe arcs cutting each other as *n n*; then a line drawn through *m n* will divide the line A B equally, and will also be perpendicular thereto.



Problem 2.—To find the side of a square that shall be any number of times the area of a given square: Let A B C D be the given square; then will the diagonal B D be the side of a square A E F G, double in area to the given square A B C D; the diagonal B D is equal to the line A G; if the diagonal be drawn from B to G, it will be the side of a square A H K L, three times the area of the square A B C D; the diagonal B L will equal the size of a square four times the area of the square A B C D, etc.



be the radius of a circle that will contain half the area, etc.



the line $o c$ to k , by the addition of half the diagonal $c d$, then will the distance $o k$ be the radius of the centres that will describe the ellipse; draw the lines $A B$, $C D$, $C E$, and $B H$, cutting the semi-diameters of the ellipse in the centres k , B , m , n ; then with the radius $m s$, and with k , and m as centres, describe the arcs $D H$ and $A E$; also, with the radius $n r$, and with n and B as centres, describe the arcs $E H$ and $A H$, and the figure $A E D H$ will be the ellipse required.

Problem 4.—To describe an ellipsis, the transverse and conjugate diameters being given: From o , as a centre, with the difference of the transverse and conjugate semi-diameters, set off $o c$ and $o d$; draw the diagonal $c d$, and continue

THE "SCIENTIFIC AMERICAN."—“It is hardly necessary for us to speak of its merits to those who are thoroughly posted up in the improvements of the age; but the general reading public may not be so well aware that it contains the finest engravings of all the late inventions—the new monitors, army and navy weapons, vessels, forts, machinery of all kinds, military and civil, mechanical and agricultural—with essays from the most distinguished scholars upon prac-

tical philosophy, chemistry, and engineering. It is indispensable to every inventor. It is useful for every family and housewife. In short, it is the best scientific and mechanical journal in the world, and we cannot see how any chemist, architect, engineer, farmer, or mechanic can do without it. MUNN & Co., Publishers, 37 Park Row, New York."—*Cass County Republican.*

MECHANICAL MOVEMENTS.

In the construction of models, or machinery, the skillful mechanic and inventor will study to avoid clumsiness in the arrangement of parts, and will naturally take pride in selecting, as far as possible, the simplest and best forms of mechanical movements.

To this end, we have thought that nothing could be more suggestive or useful than a comprehensive exhibition of many of the best mechanical forms already known.

After much labor and expense, we have brought together, condensed and engraved expressly for this work, one of the most extensive series of mechanical movements ever before published.

Here the mechanic may find at a glance the movement suited for his purpose, and may see the separate parts best adapted to any special combination of mechanism.

As these engravings are not readily to be found elsewhere, we recommend the careful preservation of this book.

DESCRIPTION OF THE MECHANICAL MOVEMENTS BY NUMBERS.

1. Shaft coupling. 2. Claw coupling. 3, 4. Lever couplings. On the driving shaft, a disk with spurs is mounted, and to the shaft to be driven a lever is hinged. By causing this lever to catch in the spurs of the disk, the coupling is effected. 5. Kneo or rose coupling, of which 26 is a side view.

6. Universal joint. 7, 8. Disk and spur coupling. 9. Prong and spur lever coupling.

10. Fast and loose pulley. 11. Sliding gear, the journal boxes of one of the wheels being moveable. 12. Friction clutch. By tightening or releasing a steel band, encircling a pulley on the shaft, the machinery is thrown in or out of

gear. 13, 14. Shoe and lever brakes. 15, 16. Change of motion by sheaves. 17. Spiral flanged shaft. 18. Connected with the rod are pawl links, catching into ratchet-teeth in the wheel to which rotary motion is to be imparted. When the rod moves in one direction, one of the pawls acts; and when the rod moves in the opposite direction, the other pawl acts in the same direction as the first. 19. The reciprocating motion of a rod is converted into rotary motion of the fly-wheel by a weight suspended from a cord, which passes over a small pulley that connects with a treadle, from which the motion is transmitted to the fly-wheel.

20. "Flying horse," used in fairs for amusement. By pulling the cords radiating from the crank, the persons occupying the seats or horses on the ends of the arms are enabled to keep the apparatus in motion. 21, 22. Bow string arrangements, to connect reciprocating into rotary motion. 23. Same purpose by differential screw. 24. The same by double rack and wheels. 25. Coupling for square shafts. 26. Side view of Fig. 5. 27. Sliding spur pulley coupling. 28. Lever with bearing roller to tighten pulley bands. 29. Chain wheel.

30. Reciprocating rectilinear into reciprocating rotary motion by two racks and cog wheel. 31. Oblique toothed wheels. 32. Worm and worm wheel. 33, 34. Claw coupling with hinged lever. 35, 36. Disk couplings, with lugs and cavities. 37. Disk coupling with screw bolts. 38, 39, 40. Shaft couplings.

41. Face view of Fig. 12. 42. Friction cones. 43. Friction pulleys. 44. Self-releasing coupling. Disks with oblique teeth. If the resistance to the driven shaft increases beyond a certain point, the disks separate. 45. Hoisting blocks. 46. Elbow crank, for changing motion. 47. Reciprocating into rotary motion by zig-zag groove on cylinder. 48. Another form of Fig. 29. 49. Reciprocating into a rotary motion.

50. Same purpose. 51. Same purpose, by double rack and two ratchet pinions. When the double rack moves in one direction, one pinion is rigid with the shaft; when the rack moves in the opposite direction, the other pinion is rigid, and a continuous rotary motion is imparted to the fly-wheel shaft. 52. Reciprocating into oscillating. 53. Rotary into

reciprocating. By the action of the wheel pins, the carriage is moved in one direction, and by the action of said pins on an elbow-lever, it is moved in the opposite direction. 54. Stamp rod and lifting cam. 55. For giving reciprocating motion to rack. 56. Same motion to a bar with slot, by means of an eccentric pin projecting from a revolving disk, and catching in the slot. 57. Walking beam and fly-wheel. 58. Reciprocating motion to pump or other rod by means of eccentric disk and friction rollers. See 81 and 104. 59. Hoisting crane.

60. Friction gears. See 43. 61. Rotary into reciprocating by rising and falling pinion acting on endless rack. 62. By the revolving cam, a rising and falling or a reciprocating rectilinear motion is imparted to a drum. 63. Reciprocating motion to a frame by means of endless rack and pinion. 64. Reciprocating rectilinear motion to a toothed rack by a toothed segment on a lever-arm, which is subjected to the action of a weight, and of an eccentric wrist-pin, projecting from a revolving disk. 65. Reciprocating motion to a rod. The wheels are of different diameters, and consequently the rod has to rise and fall as the wheels revolve. (See 110.) 66. Cam and elbow lever. 67. Rod reciprocates by means of cam. 68. Revolving into reciprocating motion, by an endless segmental rack and pinion, the axle of which revolves and slides in a slot toward and from the rack. This rack is secured to a disk, and a rope round said disk extends to the body to which a reciprocating motion is to be imparted. 69. Elliptic gears.

70. Bevel gear. 71. Worm and worm wheel. 72. Transmitting motion from one axle to another, with three different velocities, by means of toothed segments of unequal diameters. 73. Continuous revolving into reciprocating, by a cam-disk acting on an oscillating lever. 74. Intermittent revolving motion to a shaft with two pinions, and segment gear wheel on end of shaft. 75. Oscillating lever, carrying pawls which engage teeth in the edges of a bar to which rectilinear motion is imparted. 76. Oscillating lever, connects by a link with a rod to which a rectilinear motion is imparted. 77. Oscillating lever and pawls, which gear in the ratchet-wheel. 78. Common treadle. 79. Describing on a revolving cylinder a spiral line of a certain given pitch.

which depends upon the comparative sizes of the pinion and bevel-wheels.

80. Marking a spiral line, the graver moved by a screw. 81. (See Fig. 58.) 82. Plunger and rods. 83. Cross head and rods. 84. Reciprocating rod guided by friction rollers. 85. Revolving into reciprocating motion, by means of roller-arms, extending from a revolving shaft, and acting on lugs projecting from a reciprocating frame. 86. Crank motion. 87. Reciprocating motion by toothed wheel and spring bar. 88. The shaft carries a tapper, which catches against a hook hinged to the drum, so as to carry said drum along and raise the weight on the rope. When the tappet has reached its highest position, the hook strikes a pin, the hook disengages from the tappet, and the weight drops. 89. Reciprocating motion to a rod by means of a groove in an oblique ring secured to a revolving shaft.

90. Double crank. 91. Cam groove in a drum, to produce reciprocating motion. 92. Belts and pulleys. 93. Pulleys, belts, and internal gear. 94. As the rod moves up and down, the teeth of the cog-wheel come in contact with a pawl, and an intermittent rotary motion is imparted to said wheel. 95. By turning the horizontal axles with different velocities, the middle wheel is caused to revolve with the mean velocity. 96. Oscillating lever and cam groove in a disk. 97. Lazy tongs. 98. Oscillating segment and belt over pulleys. 99. Converting oscillating into a reciprocating motion by a cam-slot in the end of the oscillating lever which catches over a pin projecting from one of the sides of a parallelogram which is connected to the rod to which reciprocating motion is imparted.

100. Oscillating motion of a beam into rotary motion. 101. Motion of a treadle into rotary motion. 102. Double-acting beam. 103. Single-acting beam. 104. (See Figures 58 and 81.) 105. Device to steady a piston by a slotted guide-piece, operated by an eccentric on the driving-shaft. 106. Rod operated by two toothed segments. 107. Two cog-wheels of equal diameter, provided with a crank of the same length, and connected by links with a cross-bar to which the piston-rod is secured. 108. Device for a rectilinear motion of a piston-rod based on the hypocycloidal motion of a pinion in a stationary wheel with internal gear.

If the diameter of the pinion is exactly equal to one-half the diameter of the internal gear, the hypocycloid becomes a right line. 109. Same purpose as 56.

110. Action similar to 65. 111. Revolving motion by a circular sliding pinion gearing in an elliptical cog-wheel. 112. Similar to 96. 113. Carpenter's clamp. The jaws turn on their pivot-screws, and clamp the board. 114. An irregular vibratory motion is given to the arm carrying the wheel A, by the rotation of the pinion B. 115. Intermittent rotary motion of the pinion-shaft, by the continuous rotary motion of the large wheel. The part of the pinion shown next the wheel is cut on the same curve as the plain portion of the circumference, and, therefore, serves as a lock whilst the wheel makes a part of a revolution, and until the pin upon the wheel strikes the guide-piece upon the pinion, when the pinion-shaft commences another revolution. 116. Stop-motion used in watches to limit the number of revolutions in winding up. The convex curved part, a, b, of the wheel B, serving as the stop. 117. Several wheels, by connecting rods, driven from one pulley. 118. Intermittent circular motion is imparted to the toothed wheel by vibrating the arm B. When the arm, B, is lifted, the pawl is raised from between the teeth of the wheel, and traveling backward over the circumference again, drops between two teeth on lowering the arm, and draws with it the wheel. 119. Reciprocating rectilinear motion is given to the bar by the continuous motion of the cam. The cam is of equal diameter in every direction measured across its center.

120. Mechanism for revolving the cylinder in Colt's firearms. When the hammer is drawn back the dog, a, attached to the tumbler, acts on the ratchet, b, on the back of the cylinder, and is held up to the ratchet by a spring, c. 121. Alternate increasing and diminishing motion, by means of eccentric toothed wheel and toothed cylinder. 122. Oscillating or pendulum engine. The cylinder swings between trunnions like a pendulum. The piston-rod connects directly with crank. 123. Intermittent rotary motion. The small wheel is driven, and the friction rollers on its studs move the larger wheel by working against the faces of oblique grooves or projections across the face thereof. 124. Longitudinal and rotary motion of the rod is produced by

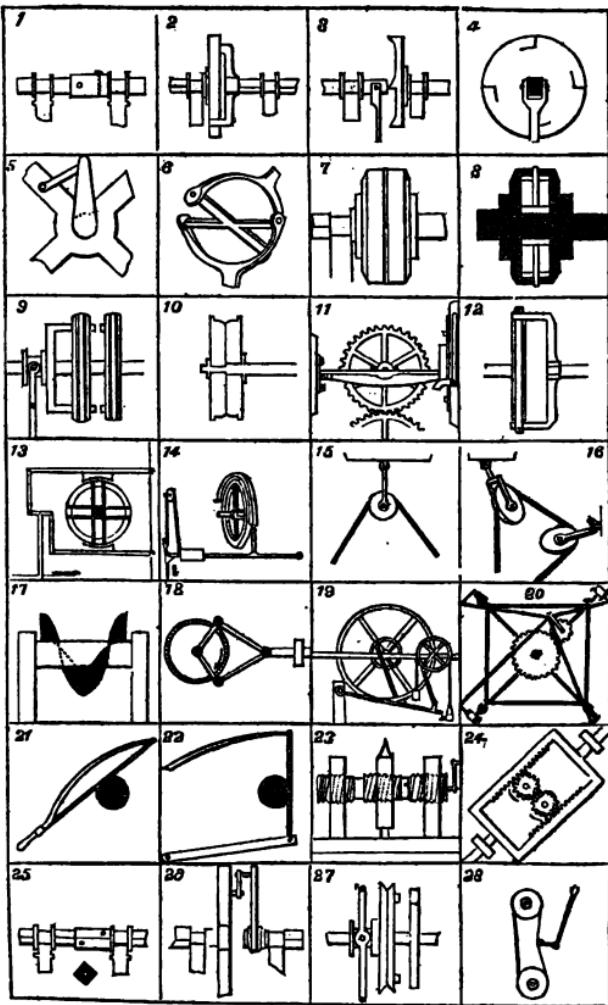
its arrangement between two rotating rollers, the axles of which are oblique to each other. 125. Friction indicator of Roberts. Upon the periphery of the belt-pulley a loaded carriage is placed, its tongue connected with an indicator. With a given load the indicating pointer remains in a given position, no matter what velocity is imparted to the pulley. When the load is changed the indicator changes, thus proving that the friction of wheels is in proportion to load, not velocity. 126. Circular intermittent rectilinear reciprocating motion. Used on sewing-machines for driving the shuttle; also on three-revolution cylinder printing-presses. 127. Continuous circular into intermittent circular motion. The cam is the driver. 128. Sewing-machine, four-motion feed. The bar, B, carries the feeding-points or spurs, and is pivoted to slide, A. B is lifted by a radial projection on cam C, which at the same time also carries A and B forward. A spring produces the return stroke, and the bar B, drops by gravity. 129. Patent crank motion, to obviate dead centers. Pressure on the treadle moves the slotted slide, A, forward until the wrist passes the center, when the spring, B, forces the slide against the stops until next forward movement.

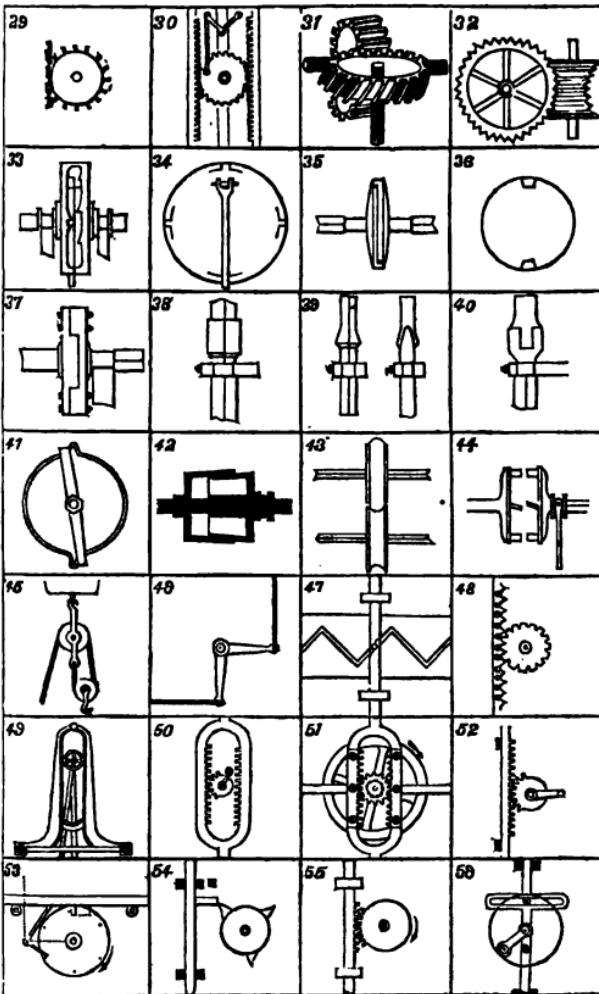
130. Four-way cock. 131. One stroke of the piston gives a complete revolution to the crank. 132. Rectilinear motion of variable velocity, is given to the vertical bar by rotation of the shaft of the curved arm. 133. Pantograph for copying, enlarging, and reducing plans, etc. C, fixed point. B, ivory tracing point. A, pencil trace, the lines to be copied with, and B, the pencil, will re-produce it double size. Shift the slide to which C is attached, also the pencil slide, and size of the copy will be varied. 134. Ball and socket joint for tubing. 135. Numerical registering device. The teeth of the worm shaft gear with a pair of worm-wheels of equal diameter, one having one tooth more than the other. If the first wheel has 100 teeth and the second 101, the pointers will indicate respectively 101 and 10.100 revolutions. 136. Montgolfier's hydraulic ram. The right hand valve being kept open by a weight or spring, the current flowing through the pipe in the direction of the arrow, escapes thereby. When the pressure of the water current overcomes the weight of the right valve, the momentum of the water opens the other valve, and the water passes into the air-chamber. On

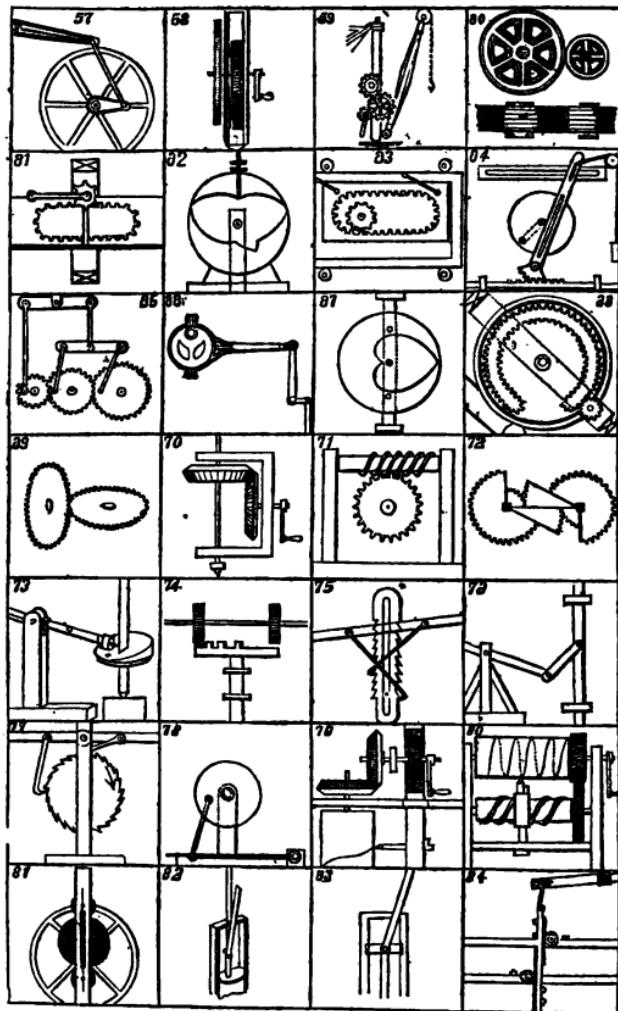
equilibrium taking place, the left valve shuts and the right valve opens. By this alternate action of the valves, water is raised into the air-chamber at every stroke. 137. Rotary engine. Shaft, B, and hub, C, are arranged eccentric to the case. Sliding radial pistons, a, a, move in and out of hub, C. The pistons slide through rolling packings in the hub, C. 138. Quadrant engine. Two single-acting pistons, B, B, connect with crank, D. Steam is admitted to act on the outer sides of the pistons alternately through valve a, and the exhaust is between the pistons. 139. Circular into rectilinear motion. The scolloped wheel communicates motion to the horizontal oscillating rod, and imparts rectilinear movement to the upright bar. 140. Rotary motion transmitted by rolling contact between two obliquely arranged shafts.

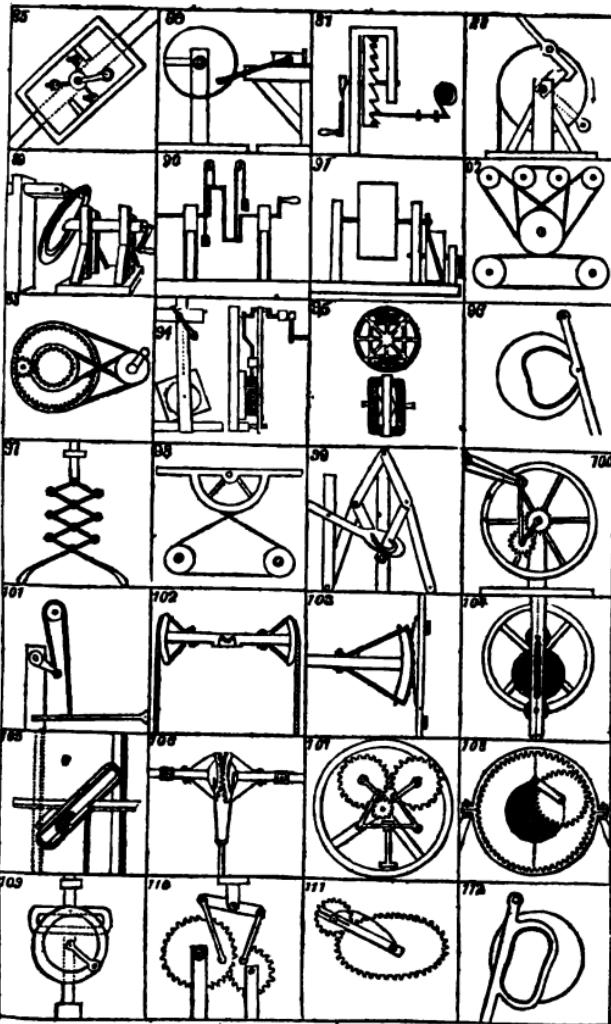
MULTUM IN PARVO.

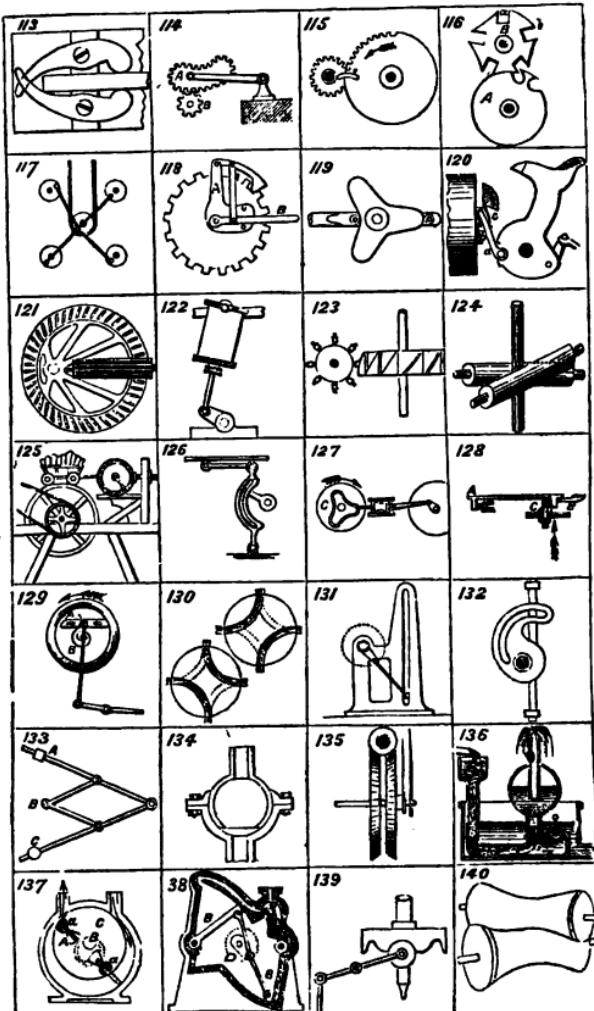
We have some queer correspondents: One writes to know if we will not be so good as to send a messenger to an address which he gives, up town—distance two and a half miles from our office—to make certain inquiries for him. It would require one and a half hours time to do the errand, and not a stamp inclosed. Another wants us to write a letter and tell him where to get a combined thermometer and barometer. Another, "will you be good enough to give me the names and addresses of several of the makers of the best brick machines;" another wants water wheels; another threshing machines; each writer desires our written opinion as to which is the best device, with our reasons, and not one is thoughtful enough to inclose a fee, or reflect that to answer his request will consume considerable of our time. Another party wishes us to write to him the recipe for making ornaments out of coal tar, where he can buy the mixture ready for use, and how much chequer-men will sell for in the New York market. For this information he sends us the generous sum of three cents in postage stamps. Mr. C. wants us to tell him of some valuable invention, of which he can buy the patent cheap, that would be suitable for him to take to sell, on his travels out West, by towns, counties, etc., three cents inclosed. Others want us to put them in communication with some person who will purchase an interest in their inventions, or manufacture for them, or furnish this or that personal information, our reply to be printed in the *Scientific American*. We are at all times happy to serve our correspondents, but if replies to purely personal errands are expected, a small fee, say from one to five dollars, should be sent.











WILL IT PAY?

On page 5, readers are informed that we are always happy to give them our opinion as to the novelty of their inventions, *without charge*. But some persons, when they send for such information, add many other inquiries, difficult to answer, and not included in our gratuitous invitation; as for example: "What is it worth? Who will buy? Will it pay? Does it infringe? Does it conflict with B's patent? If you will guarantee that it does not infringe, I will apply for a patent," etc.

It is impossible for us to answer all of these questions satisfactorily, but in special cases we might write out a reply if a fee were sent to compensate for our time. The following hints, however, may prove useful as a sort of general answer.

"What is it worth? Who will buy?" If a patent is refused, and cannot be obtained, the device is worth nothing, and no one will buy. Therefore the first thing to be considered, the first step to be taken, is to *obtain the Patent*. Do not count your chickens, nor anxiously seek a market for them, nor ask anybody to guarantee or insure their lives, before they are hatched.

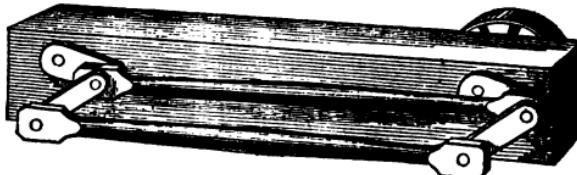
"Will it pay?" As a general rule, every patentable improvement will more than repay the small cost of taking out the patent. The sale of a single machine, or of a single right of use, will often bring back more than the whole outlay for the patent. The extent of profit frequently depends upon the business capacity of the inventor, or his agent. One man will make a fortune from an unpromising improvement, while another, possessing a brilliant invention, will realize little or nothing, owing to idleness and incompetence. [See remarks, page 42.]

"Does it infringe?" To answer this in each individual case, requires the special search mentioned at page 16. Infringement consists in the use, sale, or manufacture of the thing patented. It is not an infringement to take out or hold a patent for an improvement upon any other patent. It is not an infringement to sell rights under any patent, whether town, county or state rights, or licenses. The actual manufacture, sale, or use of an *article* may infringe; but the sale or purchase of *patent rights* is not infringement.

All good improvements are worth patenting, even if their use infringes a prior patent. Many an infringing device is worth more than the patent with which it conflicts. Patentees of conflicting inventions can usually make satisfactory arrangements with the owners of the prior patents; it is obviously to the interest of prior patentees to have their patents used as extensively as possible. The princely revenue of Howe, the inventor of the sewing machine, said to be five hundred thousand dollars annually, is derived from infringing patentees, who pay him a small royalty on each machine. The net profits divided among the owners of one of these infringing patents,—the celebrated Wheeler and Wilson—is reported to be more than one million dollars a year. We might give hundreds of analogous examples.

SUBSTITUTE FOR BELTS AND GEARS.

The object of this device is to transmit motion from one shaft to another, without the use of belt or gear wheels, both of which are in some instances objectionable.



Continuous rotary motion of the pulley shaft, is imparted to the secondary shaft through the connecting rods

STEAM PRESSURE AND TEMPERATURE.

Pressure in lbs. per sq. in.	Corresponding Temperature, Fahrenheit.	Pressure in lbs. per sq. in.	Corresponding Temperature. Fahrenheit.	Pressure in lbs. per sq. in.	Corresponding Temperature, Fahrenheit.
10	192.4	65	301.3	140	357.9
15	212.8	70	306.4	150	362.4
20	228.5	75	311.2	160	366.7
25	241.0	80	315.8	170	370.8
30	251.6	85	320.1	180	373.4
35	260.9	90	324.3	190	382.9
40	269.1	95	328.2	200	387.8
45	276.4	100	332.0	210	391.5
50	283.2	110	339.2	220	395.5
55	289.3	120	345.8	230	399.4
60	295.6	130	352.1	240	403.1

[THIRD EDITION.]

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ABSTRACT

OF THE

POPULATION OF THE UNITED STATES OF AMERICA.

CENSUS OF 1860.

MAINE.—Area, 31,766 square miles.

Androscoggin...	28,732	Hancock...	27,454	Lincoln...	27,454	Piscataq'a...	18,039	Walde...	34,447
Aroostook...	22,479	Kennebec...	55,655	Oxford...	36,084	Seagashab'k...	31,798	Wash'gton...	42,385
Cumberland...	75,592	Knox...	32,718	Penobscot...	72,731	Somerset...	36,764	York...	63,107
Franklin...	59,468	Total...							69,376

NEW HAMPSHIRE.—Area, 9,280 square miles.

Belknap...	18,548	Cheshire...	27,434	Grafton...	42,268	Merrimack...	4,408	Strafford...	31,494
Carroll...	20,464	Cook...	15,182	Hillsboro'	52,140	Rock'ham...	50,122	Sullivan...	19,041
Total...									226,072

VERMONT.—Area, 10,212 square miles.

Addison...	34,010	Chittenden...	28,171	Grand Isle...	4,200	Orience...	18,982	Windham...	26,988
Bennington...	19,485	Essex...	5,788	La Mollie...	12,311	Rutland...	35,949	Windso...	37,195
Caledonia...	21,708	Franklin...	27,241	Orangs...	25,185	Wash'ton...	37,614	Total...	314,116
Total...									

MASSACHUSETTS.—Area, 7,800 square miles.

Barnstable...	35,993	Dukes...	4,403	Hampden...	57,368	Nantucket...	6,094	Suffolk...	192,701
Berkshire...	85,130	Essex...	165,610	Hampshire...	27,621	Norfolk...	109,988	Worcester...	159,666
Bristol...	83,793	Franklin...	31,484	Middlesex...	216,361	Plymouth...	44,788	Total...	1,281,063
Total...									

RODE ISLAND.—Area, 1,306 square miles.

Bristol...	8,907	Kent...	17,303	Newport...	21,897	Providence...	107,799	Washing'ton...	16,716
Total...									174,621

CONNECTICUT.—Area, 4,674 square miles.

Fairfield...	77,476	Litchfield...	47,817	N. Haven...	97,947	Tolland...	31,187	Windham...	36,445
Hartford...	58,984	Middlesex...	32,993	N. London...	57,422	Total...			460,151
Total...									

NEW YORK.—Area, 47,000 square miles.

Albany...	113,819	Dutchess...	64,939	Livingston...	39,546	Oneida...	50,166	Schenect...	66,689
Allegany...	41,862	Erie...	141,973	Madison...	43,588	Putnam...	14,002	Suffolk...	43,276
Bronx...	26,910	Essex...	28,214	Morroe...	106,659	Queens...	57,391	Sullivan...	32,385
Catt'gus...	49,887	Franklin...	30,938	Montgo...	30,867	Rensselaer...	56,326	Flsaga...	26,730
Cayuga...	48,769	Fulton...	24,162	N. York...	81,688	Richmond...	26,493	Tempk...	31,411
Chaut'gus...	68,334	Genesee...	32,189	Niagara...	56,399	Rockland...	22,492	Ulster...	76,379
Chemung...	26,917	Greene...	31,380	Onondaga...	105,201	St. Law'...	83,689	Warren...	21,434
Chenango...	40,926	Hamilton...	5,924	Oneida...	90,087	Saratoga...	51,722	Washing'ton...	46,909
Clinton...	45,738	Herkimer...	40,560	Onondaga...	44,588	Schenecy...	30,002	Wayne...	47,763
Columbi...	47,250	Jefferson...	69,928	Ontario...	44,810	Schoharie...	34,466	West'ler...	99,457
Cortland...	26,296	Kings...	278,128	Orange...	63,814	Schoyler...	18,840	Wyoming...	31,967
Delawar...	42,467	Lewis...	28,581	Oswego...	75,969	Seneca...	26,199	Yates...	20,391
Total...									3,886,736

NEW JERSEY.—Area, 3,320 square miles.

Atlantic...	11,766	Cumberland...	22,605	Hunterdon...	23,654	Morris...	34,679	Somerset...	23,057
Bergen...	21,616	Essex...	98,797	Mercer...	37,411	Ocean...	11,176	Sussex...	29,555
Burlington...	49,720	Gloucester...	18,444	Middlesex...	34,810	Passaic...	20,013	Warren...	28,494
Camden...	34,457	Hudson...	62,717	Monmouth...	39,346	Salem...	22,468	Union...	27,781
Cape May...	7,130	Total...							672,081

PENNSYLVANIA.—Area, 46,000 square miles.

Adams...	26,012	Centre...	27,100	Franklin...	42,128	McKean...	5,859	Snyder...	16,023
Alleghany...	76,636	Clarion...	24,954	Fulton...	9,131	Mercer...	36,537	Somerset...	26,794
Armstrong...	25,797	Clinton...	17,758	Greene...	24,343	Miflin...	18,511	Sullivan...	5,697
Bedford...	26,737	Columb...	26,065	Indiana...	33,687	Monroe...	16,758	Swuquech'a...	30,277
Berke...	63,519	Cynth'...	48,735	Jefferson...	18,269	Montgo'ry...	70,500	Flsaga...	31,045
Blair...	48,735	Cumberl'd...	40,500	Juniata...	16,908	Montour...	13,683	Union...	14,245
Bucks...	63,578	Dauphin...	45,757	Lancaster...	22,093	North'phon...	26,999	Venango...	25,044
Cambria...	26,166	Delaware...	30,507	Lawrence...	22,900	North'l'd...	26,999	Warren...	19,190
Cameron...	49,431	Erie...	49,431	Lebanon...	31,621	Fayette...	22,794	Wash'lg...	46,804
Carbon...	21,033	Fayette...	30,000	Luzerne...	30,943	Hiland'm...	262,681	Wayne...	32,278
Forest...	586	Total...							2,906,570

DELAWARE.—Area, 2,120 square miles.

Kent...	27,801	Newcastle...	54,800	Sussex...	36,617	Total...	112,218
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MARYLAND.—Area, 11,124 square miles.

Alleghany...26,348	Carroll...24,532	Frederick...40,578	Montgomery...18,322	Somerset...34,902
Anne Arundel...23,901	Cecil...23,363	Harford...23,418	Prince George...23,327	Talbot...14,700
Baltimore...266,554	Charles...16,617	Howard...18,338	Qu. Anne...15,981	Washington...31,414
Calvert...10,447	Dorchester...20,461	Kent...18,267	St. Mary's...15,124	Worcester...20,861
Caroline...11,129	Total...1,000			887,084

DISTRICT OF COLUMBIA.—Area, 60 square miles.

Washington...	Total...7,076
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VIRGINIA.—Area, 61,352 square miles.

Accomack...18,588	Culpepper...12,064	Ide of W't...5,977	New Kent...6,884	Rock'g'm...23,408
Albermarle...26,625	Cumberland...8,961	Jackson...8,305	Nicholas...4,728	Russell...10,180
Alexandria...12,652	Bladwin...11,659	Jas. City...8,022	Norfolk...36,165	Scott...12,672
Alleghany...6,788	Doddridge...8,203	Jefferson...14,578	North'p'm...7,622	Shenandoah...12,086
Amelia...10,783	Elsiz...5,795	Kanawha...10,180	North'land...7,080	Smith...8,683
Amherst...13,748	Essex...10,460	King Geo...8,1031	Nottoaway...4,638	South'p'm...12,914
Appomattox...8,827	Fairfax...11,830	King'g'n...6,071	Ohio...23,422	Spotsylvania...16,076
Augusta...27,750	Fauquier...21,704	King Wm...8,022	Orange...10,708	Sta'rd...8,246
Barbour...5,969	Fayette...5,997	Lancaster...5,151	Page...8,108	Burry...6,123
Bath...5,475	Floyd...6,266	Lee...11,022	Patrick...8,328	Busey...10,178
Bedford...26,088	Floyd...10,383	Lewis...7,696	Pendleton...6,186	Taylor...7,443
Berkshire...12,025	Franklin...10,005	Logan...4,838	Pittsylvania...8,2104	Tazewell...8,820
Boone...4,840	Frederick...12,025	Marshall...12,721	Pleasant...1,948	Tucker...1,428
Botetourt...11,516	Giles...5,863	Martins...16,951	Pocahontas...2,968	Tyler...6,617
Braxton...4,992	Gloucester...2,785	Mason...16,659	Pohick...8,391	Upshur...7,262
Brooke...5,201	Goochland...10,566	McDowell...1,835	Preston...13,312	Warren...6,442
Brunswick...5,311	Goochland...10,566	Madison...8,884	Fri'e Ed'd...11,844	Warwick...1,740
Buckingham...2,988	Grayson...8,265	Marion...12,721	Fri'e Geo...8,410	Wash'ton...16,740
Buck'ham...10,512	Greenbrier...11,210	Marshall...12,721	Fri'e Wm...8,888	Wayne...6,747
Cabell...5,029	Greene...5,025	Martin...9,185	Fri'e A...7,714	Webster...1,245
Cairns...5,462	Green...8,464	Mason...9,185	Fulmer...5,418	Weston'ld...8,220
Campbell...26,197	Halifax...20,402	Matthews...7,081	Futnam...6,301	Weston'rd...6,768
Caroline...18,455	Hamph'r...12,913	Meckl'b...20,096	Galeigh...2,392	Wirt...8,781
Carroll...5,013	Hancock...4,445	Mercer...6,818	Hale...1,900	Wise...4,606
Chan. City...5,600	Hanover...17,720	Middlesex...4,264	Hendolph...8,490	Appah'k...4,885
Charlottesville...14,449	Hardy...5,984	Monong...18,048	Hick...6,866	Wood...11,088
Chesterfield...19,017	Harrison...18,709	Moor...10,787	Richmond...6,866	Wyoming...2,825
Clarks...7,146	Montgo'ry...10,615	Rappah...12,721	Ritchie...5,647	Wythe...12,265
Clay...1,787	Montgomery...12,105	Rappah...12,721	Rose...5,802	Yard...4,946
Craig...2,038	Montgomery...12,105	Morgan...5,721	Rose...5,802	Yard...4,946
Highland...4,219	Nansemond...12,088	Montgomery...12,105	Rose...5,802	Total...1,598,079
Nelson...15,016	Nansemond...12,088	Montgomery...12,105	Rock'g'm...17,200	

NORTH CAROLINA.—Area, 50,704 square miles.

Alamance...11,883	Cherokee...9,166	Halifax...19,441	McLennan...17,374	Rowan...14,888
Alexander...4,022	Chowan...6,842	Harnett...8,038	Montgo'ry...7,949	Rutherford...11,673
Alleghany...3,900	Cleaveland...12,944	Haywood...5,801	Moore...11,427	Sampson...16,622
Anson...13,864	Columbus...8,967	Henderson...10,448	Nash...11,688	Stanly...7,681
Ashe...7,968	Craven...16,373	Hertford...9,604	N. Han'v'l...15,428	Stokes...10,462
Beaufort...14,779	Cumberland...18,368	Hyde...7,794	North'p'm...13,876	Surry...10,379
Bertie...14,311	Curry...7,415	Iredell...15,847	Onslow...8,508	Tyrel...4,943
Bladen...11,905	Davidson...16,601	Jackson...8,528	Orange...16,949	Union...11,202
Brunswick...6,408	Davis...5,494	Johnson...15,657	Pasquotan...8,940	Wake...12,027
Buncombe...12,664	Duplin...18,784	Jones...5,730	Perquimans...7,246	Warren...15,736
Burke...8,237	Edgecomb...17,375	Lenor...10,211	Person...11,281	Wash'tow...8,387
Cabarrus...10,646	Forsyth...12,691	Lillington...8,285	Pitt...16,080	Watauga...4,957
Caldwell...7,492	Franklin...14,116	Lincol...8,195	Folk...4,043	Wayne...14,808
Camden...5,943	Gaston...9,310	McDowell...12,721	Randolph...16,783	Wilkes...14,745
Carteret...5,185	Gates...8,444	Macon...6,004	Richmond...11,009	Wilson...9,720
Caswell...16,215	Granville...12,394	Madison...5,998	Robeson...14,682	Yadkin...10,718
Catawba...10,730	Greene...7,928	Martin...10,169	Rock'g'm...16,745	Yancey...8,686
Chatham...19,108	Guildford...20,056	Total...1,598,079		

SOUTH CAROLINA.—Area, 29,885 square miles.

Abbeville...32,388	Chesterf'd...11,834	Georgiaton...21,305	Lexington...14,879	Richland...15,334
Anderson...22,672	Claarendon...13,094	Greenville...21,891	Marion...21,198	Spartanb...125,920
Barnwell...30,742	Colleton...30,916	Horry...7,984	McCormick...12,494	Sumter...32,880
Beaufort...40,052	Darlington...20,343	Kershaw...13,169	Newberry...20,879	Union...19,635
Charleston...81,106	Edgefield...20,867	Lancaster...11,797	Orangeb...24,886	Wil'mab'g...15,468
Chester...15,123	Fairfield...22,111	Lawrence...23,886	Pickens...19,639	York...31,368

GEORGIA.—Area, 58,000 square miles.

Appling...4,190	Bullock...5,265	Catoosa...5,002	Clayton...4,460	Dade...2,069
Baker...4,588	Burke...17,386	Charlton...1,788	Clinch...5,000	Dawson...8,287
Baldwin...9,078	Butts...8,455	Chatham...31,043	Cobb...14,941	Decatur...11,923
Banks...4,797	Calhoun...4,918	Chattoga...7,185	Coffee...2,670	De Kalb...7,807
Berrien...5,471	Camden...5,430	Chatrah'k...8,806	Colowitt...1,516	Dooly...8,315
Blair...16,261	Campbell...8,301	Cherokee...11,281	Columbia...11,860	Dougherty...8,288
Brooks...6,864	Carroll...11,991	Clarke...11,295	Coweta...14,703	Easley...8,156
Bryan...4,013	Cass...15,724	Clay...4,929	Dawson...7,633	Echols...1,491

THE UNITED STATES OF AMERICA.

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Elmwood	4,766	Harris	12,726	Madsen	5,923	Pulaski	8,744	Towns	2,460
Elbert	10,423	Hart	6,137	Marion	7,300	Putnam	16,180	Troup	16,259
Emanuel	5,061	Heard	7,805	Meriwether	16,323	Quitman	3,499	Twiggs	8,320
Fairfax	5,140	Henry	10,702	Miller	1,791	Rabun	3,271	Union	4,413
Fayette	7,047	Houston	16,613	Milton	4,662	Randolph	9,371	Upson	9,910
Floyd	15,194	Irwin	1,690	Mitchell	4,306	Richmond	21,204	Walker	10,082
Forsyth	7,749	Jackson	10,305	Monroe	16,463	Schley	4,633	Waites	11,073
Franklin	7,363	Jasper	10,743	Morgan	2,907	Meriwether	8,274	Ware	2,200
Fulton	14,427	Jefferson	10,319	Morgan	8,998	Spalding	5,000	Warren	9,820
Gilmer	6,723	Johnson	2,919	Murray	7,063	Stewart	15,422	Washington	12,096
Gaines	5,140	Jones	9,107	Muscogee	16,564	Bunter	9,426	Wayne	2,289
Gaines	7,047	Laurens	6,908	Newton	14,223	Talbot	13,617	Webster	5,030
Gordon	10,148	Lee	7,178	Oglethorpe	11,049	Talmadge	4,653	White	3,314
Greene	13,649	Liberty	8,309	Paulding	7,036	Tattnall	4,382	Whitfield	10,047
Gwinnett	12,946	Lincoln	5,466	Pickens	4,951	Taylor	6,000	Wilcox	2,115
Habersham	5,982	Lowndes	5,249	Pierce	1,973	Telfair	2,713	Wilkes	11,426
Hall	8,388	Lumpkin	4,626	Pike	10,066	Terrell	6,237	Wilkinson	9,376
Hancock	12,044	McIntosh	5,846	Polk	8,205	Thomas	10,787	Worth	2,763
Harrison	3,038	Marion	8,449	Total					1,067,329

FLORIDA.—Area, 59,268

square miles.

Alachua	8,234	Cecil	5,768	Jackson	16,193	Mariet	8,810	Sumter	1,849
Broward	8,234	Franklin	1,904	Jefferson	8,476	Mearns	3,912	Swanse	1,338
(St. Lucie)	8,234	Gadsden	8,306	Lafayette	2,068	Nassau	3,024	Taylor	1,394
Calhoun	1,446	Hamilton	4,164	Leon	12,333	New River	4,865	Volusia	1,198
Cisby	1,914	Hernando	1,200	Levy	1,782	Orange	987	Wakulla	2,858
Columbia	4,727	(Benton)		Liberty	1,457	Palmers	2,713	Walton	3,087
Dade	5,882	Hillsboro	2,981	Madison	7,779	St. John's	3,038	Washin	2,154
Daval	5,064	Holmes	1,395	Morgan	854	Rainbow	5,481	Total	140,499

ALABAMA.—Area, 50,722 square miles.

Autauga	15,729	Clarke	15,049	Hank's (dropped)		Mariet	11,160	St. Clair	11,012
Baldwin	7,553	Coffey	9,076	Henry	14,917	Marshall	11,472	Sherby	12,618
Barbour	30,818	Conecuh	5,311	Jackson	10,576	Mobil	41,131	Sumter	24,026
Benton (dropped)		Cookson	10,073	Jefferson	11,744	Mearns	15,665	Talladega	22,520
Bibb	10,864	Covington	6,460	Lauderdaile	17,420	Montgo'mry	35,908	Tallapoosa	23,227
Bloom	10,865	Dale	15,207	Lawrence	18,976	Morgan	11,161	Tuscaloosa	23,292
Buller	18,129	Daleville	20,926	Limestone	18,329	Perry	21,727	Walker	7,380
Calhoun	21,533	De Kalb	10,705	Lowndes	37,183	Pickens	22,319	Washin	4,009
Chambers	21,214	Fayette	19,859	Macon	24,834	Pike	24,435	Wilcox	24,518
Cherokee	18,300	Franklin	18,628	Madison	22,450	Randolph	20,058	Winston	3,576
Choctaw	18,847	Franklin	30,859	Marengo	31,194	Russell	26,593	Total	964,296

MISSISSIPPI.—Area, 47,158 square miles.

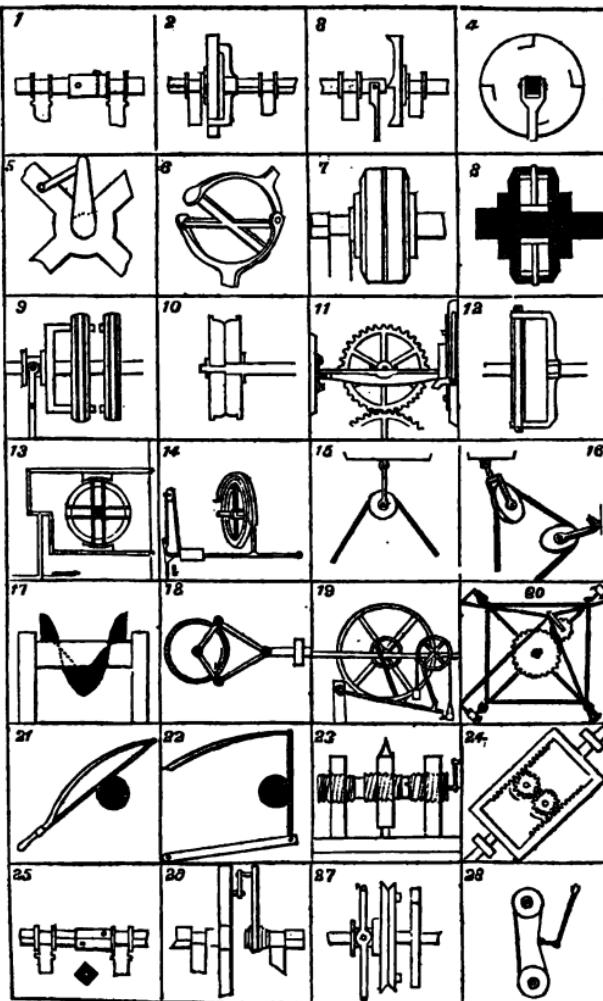
Adams	20,161	Covington	4,406	Jefferson	16,349	Neshoba	8,343	Sunflower	5,019
Amite	14,338	De Soto	23,338	Jones	3,823	Newton	8,661	Tallah'ste	7,892
Attala	14,103	Franklin	8,286	Kemper	11,683	Noxubee	20,855	Tippah	22,500
Bolivar	10,471	Greene	2,292	La Fayette	16,136	Oktibbeha	12,982	Tishomingo	24,149
Calhoun	10,818	Hancock	3,159	Lauderdaile	13,133	Panola	18,793	Tuscaloosa	4,367
Carroll	22,038	Harrison	4,819	Lawrence	9,212	Perry	2,603	Warren	20,710
Chickasaw	15,429	Hinds	31,342	Leake	8,924	Pike	11,138	Washin	16,678
Choctaw	15,740	Holmes	17,794	Lowndes	23,626	Pontotoc	22,114	Wayne	3,591
Clayborne	16,840	Isaac	17,056	Madison	15,974	Rankin	13,637	Wilkinson	15,286
Clarke	10,771	Itawamba	17,698	Mariet	4,686	Scott	8,140	Winston	9,811
Coshoma	16,223	Jackson	4,122	Marshall	26,920	Simpson	6,000	Yalobusha	16,060
Copiah	15,309	Jasper	11,007	Monroe	21,283	Smith	7,633	Yazoo	22,373
Total									781,398

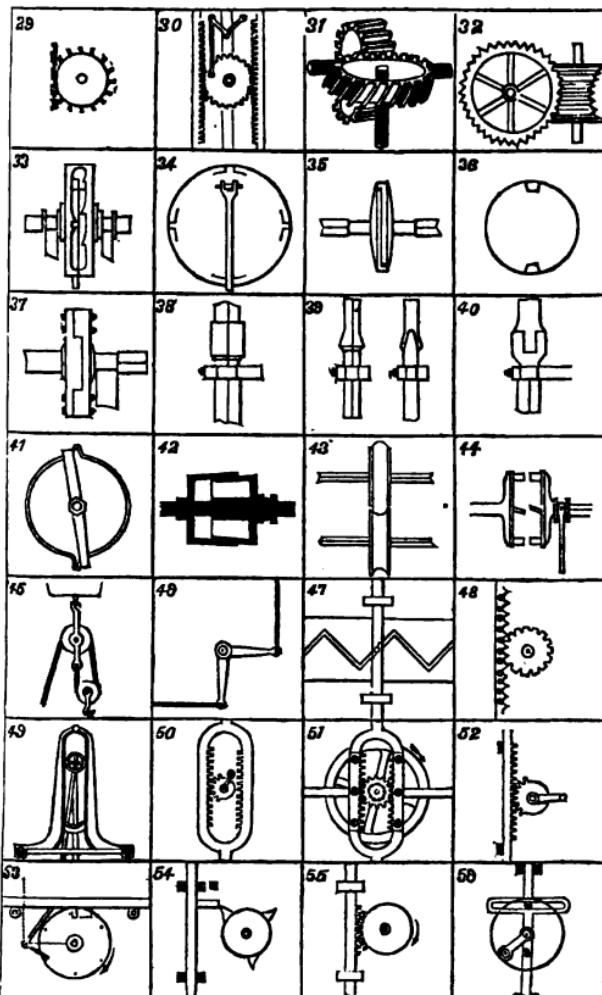
LOUISIANA.—Area, 41,255 square miles.

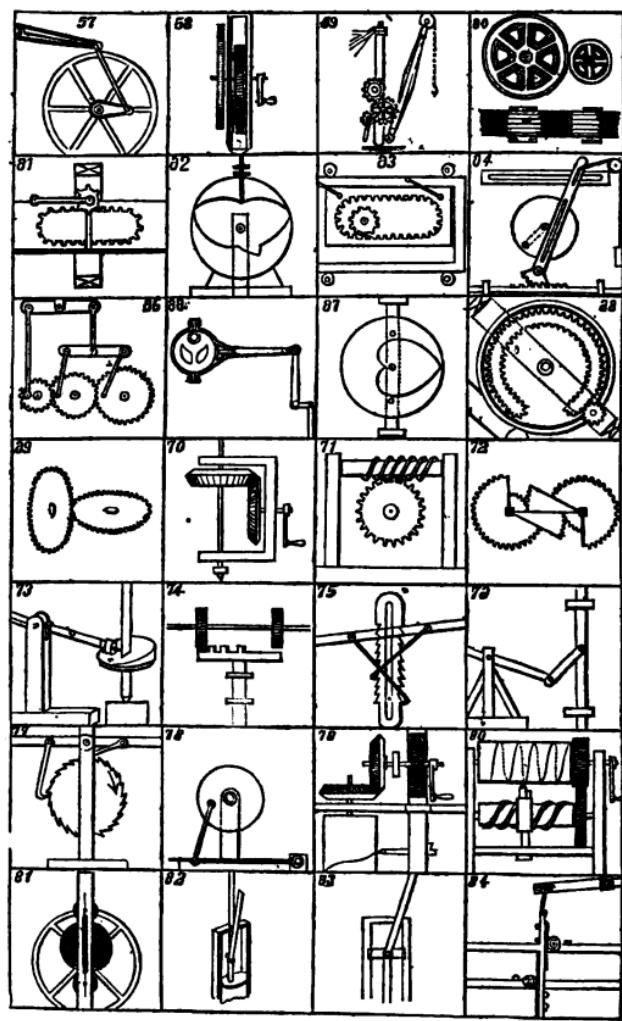
Ascension	11,397	Carroll	18,053	Jefferson	15,373	Rapides	25,890	St. Tam'ny	5,406
Assumption	15,379	Catahoula	11,652	La Fayette	9,003	Sabine	5,826	Tensas	16,098
Avoyelles	15,186	Claiborne	10,846	Le Foure	14,044	St. Bernard	4,076	Terre Boe	12,000
E. Rous	16,016	Concordia	13,905	Livingston	4,431	St. Charles	5,397	Union	10,300
E. Rous	7,312	De Soto	13,299	Madison	14,133	St. Helena	7,130	Vermillion	4,324
Bienville	11,003	Felic	14,696	Morehouse	10,367	St. James	11,504	Washita	4,727
Bossier	12,638	Felic	11,071	Natchitoches	16,997	St. J' Bas	7,932	Washin	4,708
Caddo	12,140	Franklin	6,162	Orleans	174,268	St. Landry	25,100	Winn	8,978
Calcasieu	5,928	Iberia	14,061	Plaquemine	8,493	St. M't'ns	12,677	Opelousas	23,104
Caldwell	4,858	Jackson	2,812	Pt. Coupee	7,720	St. Mary's	16,812	Total	704,290

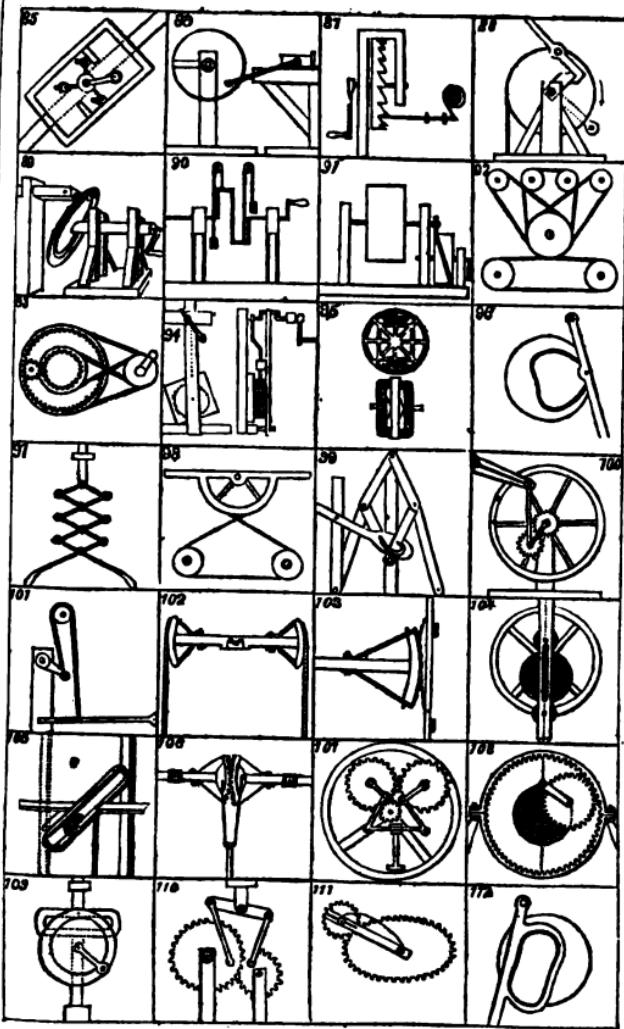
TEXAS.—Area, 237,504 square miles.

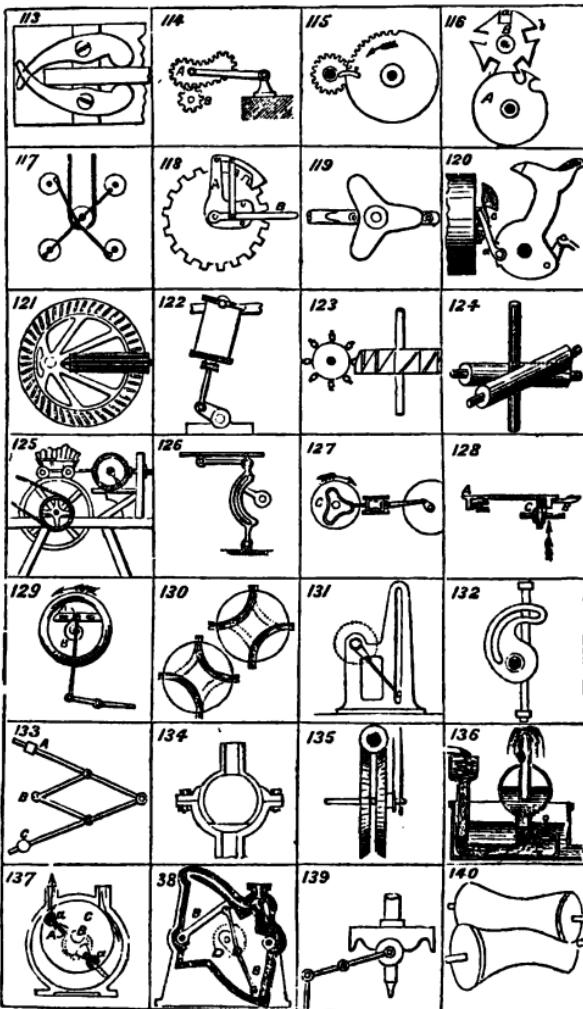
Ander	10,307	Bell	4,800	Burleson	5,683	Clay	108	Gulich (act or.)	
Angela	4,271	Bexar	14,454	Burnett	2,488	Dallas	8,065	Colem's (notor.)	
Archer (not or.)	1,281	Bianco	1,281	Calhoun (not or.)	1,281	Collin	9,296	Dawson	261
Atascosa	1,580	Boerne	2,005	Calidwell	4,481	Colorado	7,835	Denou	5,090
Austin	10,138	Bowie	5,052	Cahoon	2,643	Comal	4,030	De Witt	5,107
Bander	304	Brazoria	7,143	Cameros	6,030	Comanche	709	Dimitt (not or.)	
Bastrop	6,726	Brazos	2,776	Cass	6,411	Coches (not or.)		Duval (not or.)	
Bayou (not or.)	1,204	Brown	244	Chambers	1,508	Cook	2,760	Eastland	98
Bea	910	Buchanan	290	Cherokee	12,098	Coryell	2,068	Eliwar's (notor.)	











WILL IT PAY?

On page 5, readers are informed that we are always happy to give them our opinion as to the novelty of their inventions, *without charge*. But some persons, when they send for such information, add many other inquiries, difficult to answer, and not included in our gratuitous invitation; as for example: "What is it worth? Who will buy? Will it pay? Does it infringe? Does it conflict with B's patent? If you will guarantee that it does not infringe, I will apply for a patent," etc.

It is impossible for us to answer all of these questions satisfactorily, but in special cases we might write out a reply if a fee were sent to compensate for our time. The following hints, however, may prove useful as a sort of general answer.

"What is it worth? Who will buy?" If a patent is refused, and cannot be obtained, the device is worth nothing, and no one will buy. Therefore the first thing to be considered, the first step to be taken, is to *obtain the Patent*. Do not count your chickens, nor anxiously seek a market for them, nor ask anybody to guarantee or insure their lives, before they are hatched.

"Will it pay?" As a general rule, every patentable improvement will more than repay the small cost of taking out the patent. The sale of a single machine, or of a single right of use, will often bring back more than the whole outlay for the patent. The extent of profit frequently depends upon the business capacity of the inventor, or his agent. One man will make a fortune from an unpromising improvement, while another, possessing a brilliant invention, will realize little or nothing, owing to idleness and incompetence. [See remarks, page 42.]

"Does it infringe?" To answer this in each individual case, requires the special search mentioned at page 16. Infringement consists in the use, sale, or manufacture of the thing patented. It is not an infringement to take out or hold a patent for an improvement upon any other patent. It is not an infringement to sell rights under any patent, whether town, county or state rights, or licenses. The actual manufacture, sale, or use of an *article* may infringe; but the sale or purchase of *patent rights* is not infringement.

MARYLAND.—Area, 11,124 square miles.

Alleghany...26,348	Carroll...34,532	Frederick...40,575	Montgomery...15,372	Somerset...24,962
Anne Arundel...23,901	Cecil...23,563	Harford...23,415	Prince George...23,377	Talbot...14,790
Baltimore...266,554	Charles...18,517	Howard...15,338	Qu. Anne...15,961	Washington...31,414
Calvert...10,447	Dorchester...20,461	Kent...15,267	St. Mary's...15,194	Worcester...20,061
Caroline...11,129		Total...1,000		587,034

DISTRICT OF COLUMBIA.—Area, 60 square miles.

Washington...57,076

VIRGINIA.—Area, 61,352 square miles.

Accomack...15,588	Culpepper...12,064	Ide of W't...5,684	New Kent...5,684	Rock'g'm...23,408
Albermarle...26,626	Cumberland...6,951	Jackson...8,308	Nicholas...4,678	Russell...10,180
Alexand'r...12,652	Da'widge...16,698	Jas. City...8,798	Norfolk...36,185	Scott...12,872
Alleghany...6,768	Dedridge...5,203	Jefferson...14,075	North'p'm...7,592	Shenando'h...13,986
Amelia...10,753	Eli...5,793	Kanawha...16,160	North'rn...7,680	Smyth...5,927
Amherst...13,743	Essex...10,469	K'g & Q'n...10,831	Mottaway...8,694	South'p'm...12,914
Appomatox...8,687	Fairfax...11,538	King Geo...8,671	Ohio...22,422	Spotsyl'v...16,078
Augusta...27,750	Fauquier...21,704	King Wm...8,259	Orange...10,700	Stafford...8,565
Barbour...8,956	Fayette...5,997	Lancaster...5,151	Page...5,199	Surry...6,132
Bath...5,376	Floyd...5,236	Lee...11,032	Patrick...8,388	Sussex...10,176
Bedford...26,286	Floyd...5,236	Lewis...7,685	Pendleton...6,161	Taylor...7,463
Berkely...12,525	Florence...10,363	Logan...4,938	Pittsylvania...22,104	Tazewell...8,820
Buck'ham...15,512	Franklin...20,068	Marion...12,731	Pleasant...2,945	Tucker...1,725
Cabell...8,020	Giles...5,626	Marshall...13,001	Pocahontas...3,000	Tyler...6,417
Cahoon...8,460	Gloucester...16,938	Martins...9,185	Pohatkan...8,391	Upshur...7,382
Carroll...10,017	Gloucester...16,938	M'Dowell...1,533	Preston...15,312	Warren...6,423
Char'v...14,490	Goochland...10,466	Madison...8,264	Price B'd...11,844	Warwick...1,740
Charlottesville...10,017	Grayson...5,242	Marion...12,731	Price Geo...8,410	Washington...16,983
Chesterfield...15,780	Harrison...10,230	Martins...9,185	Price Wm...8,500	Wayne...6,177
Clarke...7,146	Harrison...10,230	M'Fad...5,974	Pri's A'...7,714	Webster...1,860
Clay...1,787	Harrison...10,230	Matthews...5,974	Piaseki...8,416	Weston'rd...6,262
Craig...2,553	Harrison...10,230	McKib'g...20,000	Pieman...6,301	Weston'rd...6,262
	Harrison...10,230	Mercer...6,518	Raleigh...8,267	Wirt...2,725
	Harrison...10,230	Middlesex...4,964	Randoiph...6,990	Wise...6,465
	Harrison...10,230	Monong'a...10,048	Rappah'k...8,250	Wood...11,690
	Harrison...10,230	Monroe...10,757	Blk'nd...8,656	Wyoming...2,925
	Harrison...10,230	Montgo'ry...10,515	B'ch...6,547	Wythe...13,880
	Harrison...10,230	Morgan...8,731	Rose...5,925	York...6,940
	Harrison...10,230	Morgan...8,731	Ross...5,945	
	Harrison...10,230	Nash...12,000	Roxana...12,015	
	Harrison...10,230	Nelson...12,015	Rock'bdge...17,200	Total...1,806,070

NORTH CAROLINA.—Area, 50,704 square miles.

Alamance...11,888	Cherokee...8,166	Halifax...18,441	McCrumb...17,374	Rowan...14,686
Alexander...6,022	Chowan...8,842	Harnett...8,038	Montgo'ry...7,649	Rutherford...1,673
Alleghany...3,590	Cleveland...12,340	Haywood...5,801	Moore...11,427	Sampson...16,622
Anson...15,664	Columbus...8,697	Heuderson...10,448	Nash...11,688	Stanly...7,881
Ashe...7,906	Craven...16,373	Hertford...7,495	N. Han'v...15,438	Stokes...10,403
Beaufort...14,779	Currituck...7,416	Hyde...7,724	North'p'm...18,376	Burry...10,579
Bertie...14,311	Iredell...15,347	Jackson...16,001	McCrumb...17,374	Rowan...14,686
Bladen...11,996	Davidson...16,001	Jackson...15,657	Montgo'ry...7,649	Rutherford...1,673
Branswick...8,400	Davie...8,494	Jackson...15,657	Moore...11,427	Sampson...16,622
Buncombe...12,654	Davie...8,494	Duplin...15,785	Nash...11,688	Stanly...7,881
Burke...9,237	Duplin...15,785	Edd...10,376	Person...11,231	Stokes...10,403
Cabarrus...10,548	Edd...10,376	Elijah...10,376	Person...11,231	Wash'g...8,361
Caldwell...7,492	Forsyth...12,691	Lenoir...10,311	Person...11,231	Wash'g...8,361
Camden...8,543	Forsyth...12,691	Lillington...8,198	Pitt...10,000	Wataga...4,857
Gaston...8,510	Gaston...8,510	Lincoln...8,198	Polk...4,043	Wayne...14,300
Carteret...5,185	Gaston...8,510	McDowell...8,264	Randolph...16,733	Wilkes...14,769
Caswell...16,215	Gates...8,444	Macon...6,084	Richmond...11,008	Wilson...9,720
Catawba...10,790	Granville...12,390	Madison...8,908	Robeson...15,480	Yadkin...16,715
Chatham...19,106	Greene...7,923	Martin...16,189	Rock'g'm...14,746	Yancey...8,455
	Guilford...20,060	Total...1,806,070		992,887

SOUTH CAROLINA.—Area, 29,885 square miles.

Abbeville...32,386	Chester'd...11,854	Georgetown...21,305	Lexington...10,379	Richland...16,334
Anderson...22,672	Clarendon...18,695	Greenville...21,391	Marion...21,190	Spartan'b...20,520
Barnwell...30,743	Colleton...30,915	Horry...7,954	Marlboro'...12,484	Sumter...32,268
Beaufort...40,062	Darlington...20,343	Kershaw...13,189	Newberry...20,879	Union...16,626
Charleston...81,106	Edgefield...30,887	Lancaster...11,797	Orange'b...24,896	Wil'msb'g...16,469
Chester...18,123	Fairfield...22,111	Laurens...22,885	Pickens...19,630	York...31,508

GEORGIA.—Area, 58,000 square miles.

Appling...4,190	Bullock...5,666	Catoosa...4,082	Clayton...4,466	Dade...8,009
Baker...4,988	Chamblee...17,185	Charlton...4,780	Cobb...3,028	Dawson...8,387
Baldwin...9,078	Bettis...6,455	Chatham...31,048	Cobb...14,941	Decatur...11,925
Banks...4,707	Culpepper...4,913	Chattahoochee...7,166	Coffee...2,876	De Kalb...7,807
Berrien...3,471	Camden...5,429	Chattahoochee...8,806	Celowitt...1,314	Dooly...8,915
Bibb...16,291	Campbell...8,301	Cherokee...11,291	Columbia...11,960	Dougherty...8,285
Brooks...6,356	Carroll...11,901	Clarke...11,295	Coweta...14,708	Early...8,156
Bryan...4,012	Catoosa...15,724	Clay...4,920	Crawford...7,008	Echols...1,481

THE UNITED STATES OF AMERICA.

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Emmick...	4,766	Harris....	13,736	Madsen...	5,933	Pelaski ...	8,744	Towns....	2,409
Ebert...	19,433	Hart....	6,137	Marion....	7,390	Peterson...	10,180	Troup....	16,256
Emanuel...	8,061	Heard....	7,805	Meriwether	15,329	Quinton...	3,499	Twiggs....	8,320
Fannin....	5,140	Henry....	10,702	Miller....	1,791	Rabun....	8,271	Union....	4,413
Fayette....	7,047	Houston....	15,618	Milton....	4,602	Randolph...	9,671	Upson....	9,919
Floyd....	15,194	Irwin....	1,699	Mitchell...	4,308	Richmond...	21,264	Walker....	10,002
Forsyth....	7,749	Jackson....	16,805	Monroe....	15,943	Schley....	4,633	Walton...	11,073
Franklin....	7,265	Jasper....	10,743	Montgomery...	2,907	Sherman...	8,274	Ware....	2,290
Fulton....	14,427	Jefferson...	10,219	Morgan....	9,998	Spalding...	5,000	Warren...	9,920
Gilmer....	8,722	Johnson....	2,819	Murray....	7,083	Stewart...	13,422	Washington	12,086
Glasscock....	3,587	Jones....	9,107	Muscogee...	16,584	Sumter....	9,426	Wayne....	2,268
Glynn....	3,880	Laurens....	6,998	Newton....	14,323	Talbot....	13,817	Webster...	5,026
Gordon....	10,145	Lee....	7,176	Oglethorpe...	11,549	Taliaferro...	4,653	White....	3,314
Greene....	13,648	Liberty....	8,369	Paulding...	7,038	Tattnall....	4,352	Whitfield...	10,047
Gwinnett....	13,916	Pickens....	5,466	Piedmont...	4,951	Taylor....	8,000	Wilcox....	9,115
Habersham....	5,908	Pierce....	5,249	Pierce....	1,973	Telfair....	2,713	Wilkes....	11,426
Hall....	8,385	Lumpkin....	4,626	Pike....	10,046	Terrell....	8,237	Wilkinson...	9,376
Hancock....	12,044	McIntosh...	5,546	Polk....	8,293	Thomas....	10,787	Worth....	2,763
Harrison....	3,038	Marion....	8,449	Total....					1,067,329

FLORIDA.—Area, 59,268 square miles.

Alachua...	8,234	Escambia...	5,768	Jackson....	16,199	Martin....	8,610	Sumter....	1,549
Brevard...	346	Franklin...	1,904	Jefferson...	9,476	Monroe....	3,912	Suwanee....	1,328
(St. Lucie) ...	346	Gadsden...	8,396	Lafayette...	2,068	Nassau...	3,634	Taylor....	1,394
Calhoun....	1,446	Hamilton...	4,154	Leou...	12,333	New River...	4,655	Volusia....	1,158
Clay....	1,914	Hernando...	1,200	Levy....	1,782	Orange....	967	Wakulla....	2,036
Columbia....	4,737	(Benton) ...	1,300	Liberty....	1,487	Patsnam...	2,712	Walton....	2,087
Dade....	85	Hillsboro....	2,981	Madison....	7,775	St. John's...	3,028	Washington	2,154
Deval...	5,095	Holmes....	1,205	Manatee....	854	Santa Rosa...	4,481		
		Marion....	8,449	Total....					Total....140,499

ALABAMA.—Area, 50,732 square miles.

Autauga....	16,720	Clanton....	16,049	Hausek (dropped)		Marietta....	11,160	St. Clair....	1,012
Baldwin....	7,533	Coosa....	9,022	Henry....	14,917	Marshall...	11,472	Shelby....	12,618
Barbour....	30,815	Conecuh....	11,311	Jackson....	10,284	Mobil...	41,131	Sumter....	24,028
Benton (dropped) ...		Cochetoo....	1,373	Jefferson...	11,744	Monroe....	15,668	Talladega...	23,520
Bibb....	1,494	Coosa....	4,154	Lauderdale...	12,820	Mongo'ry...	36,263	Tallapoosa...	22,227
Bloom....	16,866	Covington....	5,466	Limestone....	15,976	Morgan....	11,291	Tuscaloosa....	202
Bouier....	16,122	Dale....	15,207	Limestone....	15,976	Perry....	37,797	Walker...	7,260
Calhoun....	21,539	Dallas....	33,626	Limestone....	15,976	Pickens....	22,319	Washington	4,026
Chattahoochee....	22,214	Dade....	10,704	Lowndes....	37,718	Pike....	24,438	Wilcox....	24,518
Cherokee....	18,360	Franklin....	18,550	Madison....	26,450	Randolph...	20,088	Winston....	5,376
Choctaw....	18,897	Franklin....	18,550	Macon....	26,450	Russell....	26,593	Total....964,296	

MISSISSIPPI.—Area, 47,158 square miles.

Adams....	12,186	Covington....	4,408	Jefferson....	16,349	Jackson....	16,349	Marietta....	11,160
Amite....	12,333	De Soto....	23,336	Jones....	8,723	Marshall...	11,472	Shelby....	12,618
Attala....	14,161	Franklin...	8,285	Kemper....	11,682	Mobil...	41,131	Sumter....	24,028
Bolivar....	16,471	Greene....	2,232	La Fayette...	16,132	Monroe....	15,668	Talladega...	23,520
Calhoun....	15,818	Hancock....	3,139	Lauderdale...	12,820	Mongo'ry...	36,263	Tallapoosa...	22,227
Carroll....	23,038	Harrison....	4,819	Lawrence....	9,213	Morgan....	11,291	Tuscaloosa...	202
Chickasaw....	15,426	Hinds....	31,342	Lawrence....	9,213	Perry....	3,603	Tuske...	4,367
Choctaw....	15,740	Holmes....	17,704	Lowndes....	23,025	Pike....	11,135	Washington	4,026
Claiborne....	18,690	Madison....	15,299	Madison....	14,133	Pontotoc...	22,114	Wayne....	3,691
Clarke....	10,771	Itawamba....	17,698	Mari...	4,686	Raukin...	13,637	Wilkinson...	1,285
Coahoma....	5,924	Jackson....	4,122	Marshall....	14,133	Scott....	8,140	Winston....	9,811
Copiah....	15,398	Jasper....	11,007	Marion....	21,283	Simpson...	6,050	Yalab'sha...	16,000
				Monroe....	21,283	Smith....	7,630	Yazoo....	22,373
									191,398

LOUISIANA.—Area, 41,255 square miles.

Ascension....	11,485	Carroll....	18,053	Jefferson...	15,373	Rapides...	25,890	St. Tam'ny	5,406
Assumption....	15,379	Catahoula....	11,652	La Fayette...	9,005	Sabine....	5,828	Tensas....	18,686
Avoyelles....	13,196	Caliborne....	10,846	Le Fours'le	14,044	St. Bernard...	4,078	Terre Bo'e	12,000
E. Roug. E.	16,016	Concordia....	13,805	Livingston...	4,491	St. Charles...	5,297	Union....	10,300
E. Roug. W.	7,312	De Soto....	13,299	Madison....	14,133	St. Helena...	7,130	Vermillion	4,324
Bienville....	11,000	Felic'a. E.	14,696	Morehouse...	10,387	St. James...	11,504	Washita....	4,727
Boeiller....	12,628	Felic'a. W.	11,671	Natchito'le	16,697	St. J' Bap...	7,932	Washington	4,708
Caddo....	12,140	Franklin....	6,162	Orleans....	174,288	St. Landry...	23,100	Winn....	8,378
Calcasieu....	5,924	Ibererville....	14,061	Plaquemine...	8,493	St. M't'in'	12,677	Opelousas...	23,104
Caldwell....	4,638	Jackson....	2,912	P't Coupee...	7,720	St. Mary's...	16,812	Total....709,290	

TEXAS.—Area, 237,504 square miles.

Anderson....	10,397	Bell....	4,680	Burleson...	5,683	Clay....	108	Gulich (not or.)	
Angelina...	4,271	Bexar....	14,454	Bursett...	3,498	Colem'n (not or.)		Dallas....	8,065
Archer (not or.)		Blanco....	1,281	Cochran (not or.)		Collins...	8,268	Dawson...	
Atascosa....	1,680	Bosque....	2,005	Caldwell...	4,481	Colorado...	7,855	De Soto...	5,090
Austin....	10,139	Bowie....	5,092	Cameron...	2,642	Comal....	4,039	De Witt...	5,107
Bander...	3,998	Brazoria....	7,143	Cameron...	6,030	Comanche...	709	Dim'litt (not or.)	
Beaurep...	6,736	Brazos....	2,776	Cass...	8,411	Conchos (not or.)		Duval (not or.)	
Baylor (not or.)		Brown....	244	Chambers...	1,508	Cook....	2,760	Eastland...	99
Bee....	910	Buchanan....	230	Cherokee...	12,098	Coryell...	3,068	Ector (not or.)	

ABSTRACT OF THE POPULATION OF

Kills.....	5,246	Haskell (notor.)	La Salle (notor.)	Mueces.....	2,907	Throckmorton's 194	
El Paso.....	4,081	Hay.....	5,046	Orange.....	1,916	Titus.....	8,646
Journal.....	49	Henderson.....	4,406	Palo Pinto.....	1,594	Travis.....	8,020
Krath.....	2,426	Hidalgo.....	1,183	Parmer.....	8,475	Trinity.....	4,300
Falls.....	3,614	Hill.....	2,169	Palo Pinto.....	4,214	Tyler.....	4,255
Fannin.....	9,317	Limestone.....	4,537	Parker.....	8,388	Upshur.....	10,645
Fayette.....	11,604	Hopi.....	5,745	Polk.....	8,399	Uvalde.....	566
Key Bisc.....	6,143	Houston.....	5,038	Preston.....	5,206	Van Zandt.....	5,778
Fredericks.....	6,881	Hunt.....	6,654	Red River.....	6,534	Victoria.....	5,676
Frio.....	40	Jack.....	1,609	Refugio.....	1,594	Waco.....	5,191
Gulston.....	1,177	Jackson.....	2,612	Madison.....	2,238	Robertson.....	4,927
Gaudslipe.....	5,444	Jasper.....	4,041	Marion.....	3,979	Rue'nel's (notor.)	Washing'ton's 215
Gillespie.....	2,736	Jefferson.....	1,594	Mason.....	630	Rusk.....	15,800
Goliad.....	3,383	Johnson.....	4,303	Matagorda.....	2,910	Sabine.....	2,750
Goliad.....	(notor.)	Karnes.....	2,171	Maverick.....	732	San Angel.....	4,624
Gonzales.....	8,050	Kaufman.....	3,956	Medina.....	1,828	Wichita (notor.)	
Grayson.....	8,187	Kemble (not or.)		Menard (not or.)		Wilb'er (not or.)	
Grimes.....	10,307	Kerr.....	634	Milam.....	5,175	Williams' 4,426	
Hamilton.....	489	Kinney.....	61	Montague.....	7,215	Wise.....	3,100
Hardin.....	1,253	Knox.....	(not or.)	Montgo'mry.....	5,479	Wood.....	4,968
Harris.....	7,710	Nacogdoche's 8,293		Smith.....	12,316	Young.....	802
Harrison.....	15,001	Navarro.....	5,927	Starr.....	2,406	Za'Patis.....	1,945
Lamnessa.....	1,028	Newton.....	3,123	Tarrant.....	6,020	Zavalla.....	36
Crighhead's 3,066		Overton.....		Taylor (not or.)		Total.....	302,432
Total.....		Ward.....					

ARKANSAS.—Area, 52,198 square miles.	
Arkansas.....	8,644
Ashley.....	5,590
Benton.....	9,508
Bradley.....	8,588
Calhoun.....	4,103
Carroll.....	9,383
Chicot.....	9,231
Clark.....	9,733
Columbia.....	2,461
Conway.....	6,698
Craighead's 3,066	
Crawford.....	7,856
Crittenden.....	4,919
Drew.....	10,536
Drew.....	7,070
Franklin.....	7,209
Gaston.....	7,240
Giles.....	20,166
Gibson.....	21,783
Gordon.....	5,569
Giles.....	10,662
Granger.....	17,518
Carter.....	7,724
Chatham.....	2,258
Clairborne.....	9,041
Cooke.....	10,408
Coffee.....	9,669
Cumberland's 10,160	
Davidson.....	47,054
Decatur.....	6,777
De Kalb.....	10,573
Dickson.....	9,082
Dixie.....	10,536
Fayette.....	24,339
Houston.....	12,772
Houston.....	11,701
Bradley.....	6,712
Gibson.....	15,548
Cannon.....	9,569
Giles.....	15,540
Carroll.....	17,518
Granger.....	10,662
Green.....	15,964
Grundy.....	2,094
Hamilton.....	15,259
Hancock.....	7,021
Harrison.....	17,769
Hardin.....	11,214
Hawkins.....	16,141
Henderson.....	19,023
Hickman.....	6,590
Hill.....	11,841
Harrison.....	11,484
Hickman.....	15,809
Hill.....	11,841
Harrison.....	13,779
Henderson.....	14,262
Henderson.....	12,693
Cumberland's 7,340	
Daviess.....	15,540
Bath.....	12,113
Edmonson.....	4,847
Bath.....	11,197
Edmonson.....	4,847
Bourbon.....	14,839
Boyd.....	6,044
Boyle.....	9,305
Bracken.....	11,621
Breathitt.....	4,080
Breckinr'e 13,297	
Burke.....	7,299
Burke.....	7,927
Burke.....	9,318
Casey.....	8,465
Christian.....	21,628
Clark.....	11,484
Clay.....	5,652
Clinton.....	5,781
Crittenden.....	8,693
Barren.....	16,665
Bath.....	12,113
Daviess.....	15,540
Boone.....	11,197
Bourbon.....	14,839
Boyd.....	9,305
Boyle.....	12,599
Fleming.....	12,458
Grayson.....	7,982
Carroll.....	20,000
Casey.....	8,465
Christian.....	21,628
Clark.....	11,484
Clay.....	5,652
Clinton.....	5,781
Crittenden.....	8,693
Barren.....	16,665
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Boone.....	11,197
Bourbon.....	14,839
Boyd.....	9,305
Bracken.....	

OHIO.—Area, 39,964 square miles.

Adams....	20,300	Darke....	26,320	Hecking....	17,050	Miami....	26,920	Sandusky....	21,147
Allen....	19,190	Defiance....	11,880	Holmes....	20,500	Montee....	26,748	Scioto....	24,397
Ashland....	22,381	Delaware....	21,912	Huron....	20,000	Montgomery....	22,233	Seneca....	20,800
Ashmead....	21,214	Erie....	24,472	Jackson....	17,941	Morgan....	22,117	Shelby....	17,463
Athens....	21,304	Fairfield....	20,320	Jefferson....	26,117	Morrow....	20,448	Stark....	23,976
Auglaize....	17,120	Fayette....	18,980	Knox....	27,750	Muskingum....	24,417	Summit....	27,346
Belmont....	24,422	Franklin....	60,372	Lake....	15,578	Noble....	20,710	Trumbull....	30,866
Brown....	28,500	Fulton....	14,044	Lawrence....	28,284	Ottawa....	7,017	Tuscarawas....	22,463
Bucher....	24,540	Gallia....	22,646	Licking....	27,011	Pauingay....	4,948	Union....	18,507
Carroll....	14,720	Geauga....	16,817	Logan....	20,997	Perry....	19,679	Van Wert....	16,500
Champaign....	22,400	Greene....	20,107	Lorain....	20,745	Pickaway....	20,200	Vinton....	13,531
Clark....	26,200	Gurnee....	24,474	Lucas....	18,200	Pike....	18,048	Warren....	26,500
Clermont....	23,257	Hamilton....	51,411	Madison....	15,015	Portage....	24,220	Washington....	26,771
Clinton....	21,462	Hancock....	22,000	Mahoning....	25,000	Probie....	21,520	Wayne....	23,485
Columb....	22,620	Hardin....	18,400	Marion....	16,000	Putnam....	12,600	Williams....	16,500
Coshocton....	20,622	Harrison....	19,100	Meigs....	22,617	Richland....	21,180	Wood....	17,500
Crawford....	22,500	Henry....	8,901	Meigs....	26,334	Ross....	20,671	Wyandot....	16,500
Cuyahoga....	76,000	Hightland....	27,774	Merion....	14,106	Total....	1,320,500		

MICHIGAN.—Area, 56,243 square miles.

Alcona....	186	Delta....	1,171	Kal'mazoo....	94,544	Mackin'k'w (not or.)	Ottawa....	18,315	
Allegan....	16,957	Kent....	16,478	Kent's (not or.)	31,560	Presque Isle....	26		
Alpena....	380	Kennett....	1,149	Kent....	30,716	Montesem....	3,988	Rose'm (not or.)	
Astroria....	178	Genesee....	33,693	Lake....	(not or.)	Mont'ey (not or.)	Saginaw....	13,500	
Berry....	13,866	Gladwin....	14	Leelanaw....	2,150	Meuskego....	3,947	St. Clair....	26,002
Bay....	2,184	GrandTrav....	1,268	Le Peir....	14,754	Neosco....	970	St. Joseph....	21,262
Berrien....	22,376	Gratiot....	4,043	Leeswee....	38,112	Newaygo....	2,761	Sanilac....	7,801
Branch....	20,881	Hilliard....	26,675	Livington....	16,662	Oakland....	36,361	Schawas'el....	12,340
Calhoun....	25,563	Houghton....	9,235	Mackinac....	32,943	Oceana....	1,810	Schooerraft....	78
Cass....	17,781	Huron....	8,165	Manistee....	975	Ogem'w (not or.)	Tuscola....	4,886	
Cheboygan....	817	Ingham....	17,435	Manistou....	1,042	Onondaga....	4,588	Van Buren....	224
Chippewa....	1,603	Iron....	16,682	Marguette....	2,621	Osecola....	27	Wash'nawas....	58,585
Clare....(not or.)		Isoo....	175	Mason....	831	Oscoda....(not or.)	Wayne....	15,545	
Clinton....	13,916	Isabella....	1,443	Michigan....	1,988	Otsego....(not or.)	Wexfd....(not or.)		
Crawf'd (not or.)		Jackson....	35,671	Midland....	787	Total....	740,112		

INDIANA.—Area, 33,809 square miles.

Adams....	9,574	Erikhart....	20,991	Jefferson....	25,020	Noble....	14,910	Stark....	2,196
Alien....	20,294	Fayette....	10,181	Jennings....	14,754	Ohio....	5,462	Stemen....	10,374
Bartholom'w....	17,944	Floyd....	20,182	Johnson....	14,855	Orange....	13,076	Sullivan....	15,063
Benton....	2,810	Fountain....	15,467	Knox....	16,056	Oren....	14,776	Swimer'ld....	14,596
Blackford....	4,122	Franklin....	19,550	Kosciusko....	17,424	Parke....	15,582	Tippocan'....	26,765
Boone....	16,764	Fulton....	9,421	La Grange....	11,385	Perry....	11,940	Tipton....	8,171
Brown....	8,607	Gibson....	14,552	Lake....	9,143	Pike....	10,071	Union....	7,110
Carroll....	13,458	Grant....	15,770	Le Forte....	22,921	Potter....	10,314	Vanderb'y....	36,544
Cass....	16,543	Greene....	16,042	Lawrence....	15,983	Pozer....	16,180	Vermillio....	8,428
Clarke....	20,505	Hamilton....	17,810	Madison....	16,514	Pulaski....	8,711	Vigo....	22,519
Clay....	12,160	Hancock....	12,801	Mariou....	30,885	Putnam....	20,061	Wabash....	17,547
Clinton....	14,804	Harrison....	18,901	Marshall....	15,723	Randolph....	16,997	Warren....	10,057
Crawford....	8,208	Hendricks....	16,963	Martin....	8,975	Ripley....	19,061	Warrick....	13,263
Daviess....	13,191	Henry....	36,118	Miami....	16,861	Rush....	16,192	Washington'....	17,920
Dearborn....	34,405	Howard....	19,924	Monroe....	12,845	St. Joseph....	18,446	Wayne....	28,565
Decatur....	17,264	Huntingt'....	20,869	Montgo'mry....	20,869	Scott....	7,304	Wells....	10,884
De Kalb....	15,980	Jasper....	4,292	Newton....	2,360	Shelby....	19,671	White....	8,283
Delaware....	15,758	Jay....	11,394	Total....		Spencer....	14,886	Whidley....	10,781
Dubois....	10,394								1,320,941

ILLINOIS.—Area, 55,405 square miles.

Adams....	41,322	De Witt....	10,819	Jackson....	8,469	Macon....	15,755	Pulaski....	3,860
Alexander....	4,706	Douglas....	7,140	Jasper....	8,373	Macoupin....	34,602	Putnam....	5,887
Bond....	8,813	Du Page....	14,711	Jefferson....	12,965	Madison....	31,218	Randolph....	17,296
Brown....	11,475	Edgar....	16,926	Jersey....	12,033	Mariou....	12,733	Richland....	8,711
Brown....	8,928	Franklin....	6,454	Jo Daviess....	27,377	Marshall....	18,487	Rock Is'l....	492,306
Bureau....	25,429	Flemingham....	7,816	Johnson....	9,342	Mason....	10,893	St. Clair....	87,694
Calhoun....	5,145	Fayette....	11,198	Kane....	30,060	Massac....	6,214	Seine....	8,381
Carroll....	11,733	Ford....	1,979	Kankakee....	16,416	Menard....	9,401	Sangamon....	22,256
Cass....	11,223	Franklin....	9,393	Kendall....	13,074	Mercer....	15,043	Schuyler....	14,688
Champ'ignal....	14,523	Fulton....	33,398	Knox....	28,063	Monroe....	12,803	Scott....	9,070
Christian....	10,493	Gallatin....	8,054	Lake....	15,264	Montgo'mry....	13,892	Shelby....	14,656
Clarks....	14,987	Greene....	16,003	La Salle....	46,332	Morgan....	32,113	Stark....	8,004
Clay....	8,926	Grandy....	10,379	Lawrence....	8,214	Moultrie....	6,320	Stephens'....	26,113
Clinton....	10,941	Hamilton....	8,918	Lee....	17,651	Ogle....	22,897	Tazewell....	21,471
Coles....	14,300	Hancock....	20,061	Livingston....	11,692	Perry....	36,800	Union....	11,182
Cook....	14,627	Hardin....	3,743	Logan....	14,276	Perry....	6,552	Vermillion....	19,801
Crawford....	11,561	Henderson....	8,901	McDonaugh'....	30,069	Platt....	6,137	Wabash....	7,313
Cumberland....	8,531	Henry....	20,655	McHenry....	22,969	Pike....	37,340	Warren....	14,396
De Kalb....	19,006	Iroquois....	12,924	McLean....	26,749	Pepe....	6,743	Washing'n....	13,371

Wayne.....	12,233	Whiteside.....	15,740	Will'mason.....	12,205	Winnesh'go.....	24,492	Woodford.....	13,283
White.....	12,403	Will.....	25,321	Total.....					1,711,733

WISCONSIN.—Area, 53,924 square miles.

Adams.....	6,497	Dane.....	45,992	Jefferson.....	26,771	Oconto.....	3,600	Shawano.....	6,229
Ashland.....	513	Dodge.....	42,819	Jeanes.....	8,704	Outagamie.....	9,488	Sherburne.....	26,549
Bad Ax.....	11,612	Door.....	2,948	Kenosha.....	13,811	Oneida.....	15,674	St. Croix.....	6,395
Browns.....	11,797	Douglas.....	829	Keweenaw.....	5,532	Pepin.....	2,397	Trempeale.....	2,446
Buffalo.....	3,855	Dane.....	2,723	Le Cross.....	12,194	Pierce.....	4,673	Walworth.....	26,460
Burnet.....	12	Eau Claire.....	3,184	Le Fayette.....	18,141	Polk.....	1,412	Washington'.....	22,895
Calumet.....	7,896	F'du Lac.....	34,155	Le Pointe.....	7,604	Racine.....	21,340	Waupaca.....	6,064
Chippewa.....	1,895	Grant.....	31,207	Manit.....	22,385	Marathon.....	2,824	Richland.....	9,737
Clark.....	78	Green.....	19,881	Marathon.....	2,824	Rio.....	26,692	Waushara.....	8,772
Columbia.....	24,446	Gr's Lake.....	12,651	Marquette.....	8,236	Rock.....	18,994	Wood.....	9,428
Crawford.....	5,071	Iowa.....	18,998	Milwaukee.....	21,554	Shawano.....	18,994		
Dallas.....	19	Jackson.....	4,171	Monroe.....	8,398	Total.....	778,073		

IOWA.—Area, 50,914 square miles.

Adair.....	984	Clarke.....	5,477	Hamilton.....	1,099	Madison.....	7,398	Sac.....	946
Adams.....	1,638	Clay.....	1,784	Hancock.....	179	Mahaska.....	14,818	Scott.....	20,989
Alemakee.....	12,298	Clayton.....	20,783	Hardin.....	5,446	Marion.....	16,818	Shelby.....	818
Appanoose.....	11,988	Clinton.....	18,938	Harrison.....	2,622	Marshall.....	6,015	Sieu.....	18
Adobumen.....	454	Crawford.....	268	Henry.....	18,768	Mitchell.....	4,406	Story.....	4,882
Ademton.....	8,622	Dallas.....	4,244	Haward.....	3,163	Morgan.....	3,406	Tama.....	4,265
B'ld Hawk.....	8,244	Davis.....	12,764	Humboldt.....	272	Mosona.....	2,889	Taylor.....	3,669
Boone.....	4,291	Decatur.....	8,677	Ida.....	1,418	Moore.....	8,611	Tipton.....	2,612
Bremer.....	4,918	Delaware.....	11,028	Iowa.....	8,079	Montgo'ry.....	1,256	Van Buren.....	17,003
Buchanan.....	7,906	D'I Moine.....	1,500	Jackson.....	18,494	Muscatine.....	16,444	Webb.....	4,618
Buena Vista.....	37	Dickinson.....	1,500	Jasper.....	9,897	Oceola.(motor.)	Warren.....	16,263	
Bun's be (notor.)		Dubuque.....	31,183	Jefferson.....	15,037	O'Brien.....		Washington'.....	
Butler.....	8,724	Emmett.....	104	Jones.....	10,578	Page.....	4,419	Wayne.....	8,411
Cathomen.....	47	Fayette.....	12,078	Jones.....	13,205	Pete Alto.....	228	Webster.....	3,044
Cerro Gordo.....	281	Floyd.....	2,745	Kosciusko.....	13,264	Plymouth.....	145	Winnebago.....	1,054
Cerro.....	1,613	Franklin.....	1,809	Kossuth.....	415	Pottawattomie.....	108	Winnebago'.....	13,942
Cedar.....	12,949	Fremont.....	4,074	Lee.....	29,229	Polk.....	11,025	Woodbury.....	1,110
Cerro Gordo.....	940	Green.....	1,374	Linn.....	18,980	Pottawattomie'.....	4,962	Worth.....	258
Cherokee.....	87	Grindly.....	702	Louisa.....	10,570	Powell.....	8,570	Wright.....	653
Chickasaw.....	4,338	Guthrie.....	2,058	Lucas.....	5,769	Ringgold.....	2,923	Total.....	574,946

MINNESOTA.—Area, 95,274 square miles.

Aiken.....	2	Dakotah.....	9,093	Kandiyohi.....	76	Nicollet.....	3,773	Sherburne.....	731
Anoka.....	3,108	Dodge.....	3,797	Lake.....	265	Noble.....	36	Sibley.....	3,069
Becker.....	285	Douglas.....	196	Le Sueur.....	5,818	Olmstead.....	9,427	Stearns.....	4,605
Benton.....	627	Faribault.....	1,335	Mankato.....	1,335	Otter Tail.....	940	Stevens.....	3,923
Blue Earth.....	4,803	Fillmore.....	13,643	Masonia.....	195	Pembina.....	1,812	St. Louis.....	408
Breckenridge.....	79	Freeborn.....	3,367	Martin.....	151	Pierce.....	10	Todd.....	430
Brown.....	2,330	Goodhue.....	8,897	McLeod.....	1,268	Pine.....	1,741	Trumbull.....	40
Buchanan.....	38	Heenepla.....	13,569	Meeker.....	938	Pipestone.....	32	Wabasha'.....	7,208
Carlton.....	51	Houston.....	6,645	Mille Lac.....	73	Polk.....	349	Wabasha.....	
Carver.....	5,195	Iaanti.....	284	Monongala.....	356	Ramsey.....	12,150	Waseca.....	3,081
Cass.....	150	Itasca.....	51	Morrison.....	818	Reville.....	248	Washington'.....	6,123
Chicago.....	91	Jackson.....	181	Mower.....	1,044	Rice.....	7,542	Wilson.....	5,308
Cottonwood.....	12	Kanabac.....	30	Murray.....	98	Scott.....	4,694	Wright.....	8,730
Crow Wing.....	269	Total.....							172,023

MISSOURI.—Area, 67,380 square miles.

Adair.....	8,581	Clay.....	13,026	Howell.....	3,169	Monroe.....	14,785	St. Charles.....	10,225
Andrew.....	11,850	Clinton.....	7,848	Iron.....	5,842	Montgo'ry.....	9,718	St. Clai.....	6,069
Aitchison.....	4,849	Cole.....	9,096	Jackson.....	22,914	Morgan.....	5,202	St. Francis.....	7,346
Audrain.....	8,074	Cooper.....	17,356	Jasper.....	8,869	N. Madrid.....	5,655	St. Genev'ie.....	6,723
Barry.....	7,704	Crawford.....	5,827	Jefferson.....	10,844	Newton.....	9,324	St. Louis.....	100,335
Barton.....	1,817	Dade.....	7,073	Johnson.....	14,844	Nodaway.....	5,265	Saline.....	14,700
Bales.....	7,316	Dallas.....	5,892	Knox.....	8,730	Oregon.....	3,003	Schuyler.....	8,697
Benton.....	9,072	Daviess.....	9,006	Le Cled.....	5,180	Osage.....	7,879	Scotland.....	8,473
Bellinger.....	7,308	De Kalb.....	8,294	Le Fayette.....	20,091	Ozark.....	2,447	Scott.....	8,347
Boone.....	19,487	Dent.....	5,654	Lawrence.....	8,847	Pemiscot.....	2,981	Shanion.....	2,284
Buchanan.....	23,861	Dodge.....	4,044	Lewis.....	12,268	Perry.....	9,128	Shelby.....	7,301
Butler.....	2,891	Douglas.....	2,415	Lincoln.....	14,214	Pettis.....	9,492	Stoddard.....	7,077
Caldwell.....	6,634	Dunklin.....	5,026	Linn.....	9,115	Phelps.....	8,914	Stone.....	2,401
Callaway.....	17,446	Franklin.....	18,083	Livingston.....	7,417	Pike.....	18,428	Sullivan.....	8,198
Camden.....	4,978	Gasconade.....	8,727	McDonald.....	4,049	Piatt.....	18,841	Taney.....	8,575
Cl. Gir'd'.....	15,647	Gentry.....	11,980	Macon.....	14,407	Polk.....	8,004	Texas.....	8,000
Greens.....	9,775	Madison.....	5,864	Marion.....	4,201	Pulaski.....	3,048	Vernon.....	4,779
Carter.....	1,224	Marion.....	7,856	Marion.....	10,280	Putnam.....	9,395	Warren.....	6,003
Cass.....	9,768	Harrison.....	10,627	Marion.....	8,300	Ralls.....	8,022	Washington'.....	9,725
Cedar.....	6,659	Henry.....	9,854	Mercer.....	8,300	Randolph.....	11,466	Wayne.....	6,025
Chariton.....	13,269	Hickory.....	4,705	Miller.....	6,812	Ray.....	14,061	Webster.....	7,600
Christian.....	5,491	Holt.....	6,850	Mississippi.....	4,269	Reynolds.....	3,173	Wright.....	4,600
Clark.....	11,604	Howard.....	16,949	Moniteau.....	10,064	Ripley.....	3,147	Total.....	1,162,317

CALIFORNIA.—Area, 188,981 square miles.

Alameda...	8,972	Humboldt...	2,994	Nevada...	16,647	San Fran...	44,204	Stanislaus...	2,945
Amador...	10,822	Klamath...	1,006	Placer...	12,376	San Joaquin...	9,434	Sutter...	3,390
Bennie...	15,107	L'Angel's...	1,338	Plumas...	4,383	S'N L's Ob'e...	7,083	Tehama...	4,044
Calaveras...	18,393	Marin...	2,334	Sacram'nto...	24,148	San Mateo...	3,214	Trinity...	4,126
Colusa...	3,374	Mariposa...	6,243	St. Barbara...	2,443	Shasta...	4,238	Tuolumne...	4,326
C'Dra Cocts...	5,330	Mendocino...	3,967	St. Clara...	11,919	Sierra...	11,393	Tuolumne...	16,329
Del Norte...	1,097	Merced...	1,141	Santa Cruz...	4,948	Siskiyou...	7,928	Tolo...	4,716
El Dorado...	20,662	Monterey...	4,730	S. Bernard'ad...	8,444	Solano...	7,170	Yuba...	12,671
Fresno...	4,608	Napa...	8,415	San Diego...	4,226	Sonoma...	11,967	Total...	380,016

OREGON.—Area, 102,806 square miles.

Benton...	3,074	Cook...	384	Josephine...	6,622	Malheur...	4,164	Wasco...	1,000
Clackamas...	5,466	Curry...	504	Lane...	4,760	Polk...	3,626	Washington...	2,681
Clatsop...	466	Douglas...	8,264	Linn...	6,773	Tillamook...	98	Yamhill...	2,345
Columbia...	882	Jackson...	5,736	Marion...	7,008	Umpqua...	1,364	Total...	52,464

KANSAS.—Area, 78,418 square miles.

Allen...	3,867	Clay...	163	Godfrey...	19	Lykins...	4,980	Pottawat'm...	588
Anderson...	3,400	Coffey...	2,842	Greenwood...	756	McGee...	1,601	Riley...	1,226
Atchison...	7,729	Davis...	1,163	Hunter...	158	Marion...	74	Shawnee...	3,613
Bourbon...	8,103	Dickinson...	373	Jackson...	1,988	Marshall...	2,980	Wabaunsee...	1,964
Breckenridge...	3,593	Desha...	8,084	Jefferson...	4,458	Morr...	770	Washington...	309
Brown...	3,209	Dern...	88	Johnson...	4,383	Nemaha...	2,437	Wilson...	27
Butler...	437	Douglas...	8,637	Leaven'wth...	15,600	Osage...	1,113	Woodson...	1,456
Chase...	808	Franklin...	3,081	Linn...	6,236	Otoe...	238	Wyandot...	2,000
Total...									107,116

The population of the Territories is rapidly increasing, and no reliable Census Report can be here presented.

Population of the Principal Cities and Towns.*Census of 1860.*

Augusta, Me...	7,609	Baton Rouge, La...	5,428	Danville, Pa...	6,285	Haverst'w, N.Y...	5,461
Abington, Ms...	8,537	Concord, N.H...	10,895	Dayton, O...	20,422	Hoboken, N.J...	9,023
Adams, Ms...	6,924	Concord, N.Y...	10,595	Detroit, Mich...	46,619	Hudson, N.J...	7,329
Atticboro', Me...	6,066	Crossings, Ma...	26,060	Dubuque, Ia...	13,012	Hackens'k, N.J...	5,488
Albany, N.Y...	62,368	Chautauk, N.Y...	25,065	Davenport, Ia...	11,266	Harrisburg, Pa...	13,406
Auburn, N.Y...	10,988	Cheslea, Ms...	13,394	Denver, Col...	4,749	Hempfield, Pa...	5,458
Arcadia, N.Y...	5,312	Chicopee, Mass...	7,261	Eufield, Ct...	4,907	Houston, Tex...	5,000
Amherst, N.Y...	5,089	Cumberland, R.I...	8,338	Kimira, N.Y...	5,632	Hamilton, O...	7,223
Alleghany, Pa...	28,703	Cranston, R.I...	10,676	Ellisburg, N.Y...	5,614	Hannibal, Mo...	6,505
Allentown, Pa...	8,026	Cortland, N.Y...	10,760	E. Chester, N.Y...	5,622	Ithaca, N.Y...	6,843
Altoona, Pa...	11,206	Cohoes, N.Y...	8,808	Elizabeth, N.J...	5,677	Indi'polis, Ind...	8,612
Alexandria, Va...	12,493	Canand'g'a, N.Y...	7,075	Erie, Pa...	5,214	Iowa City, Ia...	5,214
Atlanta, Ga...	9,554	Canton, N.Y...	7,778	Easton, Pa...	8,944	Johnstown, N.Y...	8,611
Algiers, La...	5,816	Canton, N.Y...	6,379	Evansville, Ind...	11,468	Jamaica, N.Y...	6,618
Adrian, Mich...	6,212	Catkill, N.Y...	5,275	Fall River, Ma...	14,027	Jersey City, N.J...	9,228
Altoe, Ill...	6,333	Corning, N.Y...	6,005	Fitchburg, Ma...	7,406	Jackson's'le, Fla...	2,198
Aurora, Ill...	6,011	Champlain, N.Y...	5,857	Flushing, N.Y...	1,169	Jefferson, La...	5,107
Atchison, Kan...	2,616	Camden, N.J...	14,358	Fishkill, N.Y...	5,546	Janesville, Wis...	7,703
Bangor, Me...	16,407	Carlisle, Pa...	5,664	Frederick, Md...	8,143	Jefferson City, Mo...	2,060
Biddeford, Me...	5,575	Carbondale, Pa...	5,340	Frostburg, Md...	6,286	Key West, Fla...	2,083
Bath, Me...	8,076	Chambers'g, Pa...	5,257	Freder'ks'g, Va...	5,072	Kingston, N.Y...	14,046
Belfast, Me...	5,520	Columbus, Pa...	5,007	Ft Wayne, Ind...	10,388	Kalm's'asco, Mich...	6,076
Burlington, Vt...	7,713	Cumberland, Md...	8,478	F'd du Lac, Wis...	5,150	Kokuk, Ia...	5,137
Boston, Mass...	177,481	Charleston, S.C...	51,210	Fort Smith, Ark...	5,229	Lawrence, Kan...	1,046
Beverly, Ms...	6,154	Chester, Pa...	5,082	Glencoester, Me...	10,303	Leavenw'h, Kan...	7,429
Blackstone, Ms...	5,453	Columbus, Ga...	5,621	Greenwich, Ct...	6,522	Lexington, Me...	4,116
Brookline, Ms...	6,164	Columbus, Miss...	3,308	Greenbush, N.Y...	5,229	Lowell, Ma...	50,027
Barnstable, Ms...	6,129	Camden, Ark...	1,343	Galen, N.Y...	5,140	Lynn, Ma...	18,008
Bristol, R.I...	5,271	Covington, Ky...	16,471	Georgetown, D.C...	5,723	Lawrence, Ms...	17,020
Bridgeport, Ct...	13,290	Cincinnati, O...	161,044	Galveston, Tex...	5,177	Lockport, N.Y...	15,222
B'klyn, N.Y...	256,664	Cleveland, O...	36,054	G'd Rapids, Mich...	5,068	Lenox, N.Y...	5,024
Bufhalo, N.Y...	81,131	Columbus, O...	18,555	Gales, Ill...	5,198	Little F'ls, N.Y...	5,203
B'k'n, N.Y...	9,922	Dubuque, Ia...	7,567	Galesburg, Ill...	5,028	Lisbon, N.Y...	5,646
Bingham'm, N.Y...	8,328	Chicago, Ill...	109,263	Golden City, Col...	5,014	Lansing'b'g, N.Y...	5,677
Barre, N.Y...	7,227	Danvers, Mass...	5,110	G't Salt La City, S...	5,125	Lyon, N.Y...	5,077
Bath, N.Y...	5,127	Dover, N.H...	5,002	Haverhill, Ms...	5,065	Lancaster, Pa...	17,000
Bergen, N.J...	7,429	Dorchester, Ms...	5,128	Holyoke, Ms...	4,997	Lynchburg, Va...	8,885
Burlington, N.J...	5,174	Dedham, Ms...	5,020	Harford, Ct...	29,152	Little Rock, Ark...	5,125
Birmingham, Pa...	6,046	Dunbar, Ms...	5,110	Hemp'td, N.Y...	5,175	Louisville, Ky...	20,221
Baltimore, Md...	212,419	Dunbar, Ms...	5,110	Huntington, N.Y...	5,125	Lexington, Ky...	5,221
Bloomington, Ill...	7,076	Derby, Ct...	5,444	Hudson, N.Y...	5,022	Lafayette, Ind...	5,125
Burlington, Ia...	6,708	Deer Park, N.Y...	5,186	Hector, N.Y...	5,023	La Porte, Ind...	5,123

Mc'chester, N.H.	20,107	N. Brus'k, N.J.	11,265	Peoria, Ill.	....	14,426	St. Louis, Mo.	151,780
Millford, Ms.	....	1,132	Norfolk, Va.	....	14,809	Quincy, Ms.	....	6,778
Marietta, Ms.	7,946	Newbern, N.C.	5,434	Queens'bg', N.Y.	7,146	St. Joseph, Mo.	8,933	St. Joseph, Mo.
Mariboro', Ms.	4,911	Natchez, Miss.	13,553	Quincy, Ill.	....	13,718	St. Paul, Minn.	10,401
Maiden, Ms.	....	8,868	N Orleans, La.	168,472	Rockland, Me.	....	7,316	St. Anth'y, Minn.
Meriden, Ct.	....	7,628	Nashville, Tenn.	18,987	Rutland, Vt.	....	7,677	Sacramento, Cal.
Morrisania, N.Y.	2,948	Newport, Ky.	....	10,046	Roxbury, Ms.	....	26,137	Seale, Or.
Malone, N.Y.	....	6,686	N. Albany, Ind.	12,847	Randolph, Ms.	....	6,760	SantaFe, N.Mex.
Middleton, N.Y.	6,243	Nebraska City	....	1,912	Rechesier, N.Y.	48,243	Taunton, Ms.	....
Manline, N.Y.	....	4,028	Neosho, N.Y.	....	16,817	....	18,376	Troy, N.Y.
Milton, N.Y.	....	5,258	Oyster Bay, N.Y.	9,188	Boone, N.Y.	....	6,244	....
Macou, Ga.	....	3,247	Ogdens'bg', N.Y.	7,410	Rahway, N.J.	....	7,130	Trenton, N.J.
Mobile, Ala.	....	23,259	Ogallala, N.Y.	....	Reading, Pa.	....	22,182	Tuscaloosa, Ala.
Montgomery, Ala.	....	8,889	O'lelawn, N.Y.	7,000	Richmond, Va.	....	37,916	Toledo, O.
Madison, Ind.	....	8,133	Onondaga, N.Y.	6,112	Richmond, Ind.	....	6,003	....
Madison, N.J.	....	8,877	Orange, N.J.	....	Rockford, Ill.	....	7,363	Terre Haute, Ind.
Milw'kes, Wis.	....	4,254	Oshkosh, Wis.	....	Rock Island, Ill.	....	5,130	Utica, N.Y.
Madison, Wis.	....	6,011	Oregon City, Or.	....	Racine, Wis.	....	7,622	....
Muscatine, Ia.	....	5,324	Ogden, Utah	....	Sacco, Ms.	....	6,222	Vicksburg, Miss.
Minnep's, Minn.	2,584	Omaha, Neb.	....	1,464	Salem, Ms.	....	22,263	Virg. City, Nev.
Messilla, N.Mex.	2,406	Pembina, Dak.	....	1,088	Springfield, Ms.	....	16,196	Westbrook, Me.
Memphis, Tenn.	22,826	Pfotzheim, Ms.	....	2,026	Springfield, Ill.	....	1,112	Worcester, Ms.
Newshus, N.H.	10,065	Pt. Fe'd'v, Ms.	....	2,764	Pt. Fe'd'v, Ms.	....	2,764	Weymouth, Ms.
New Bed'f'd, Ms.	22,300	Portland, Ms.	....	26,342	Portland, Ms.	....	6,049	Woburn, Ms.
Newb'rypt', Ms.	13,401	Portland, Ms.	....	1,371	Portland, Ms.	....	13,283	Smithfield, R.I.
Newton, Ms.	....	5,382	Port'nb, N.H.	9,335	Rock Island, Ct.	....	7,740	Stonington, Ct.
North'pton, Ms.	....	6,788	Pittfield, Ms.	....	Rockford, Ct.	....	7,185	Waitham, Ms.
North'pton, Ms.	....	6,788	Plymouth, Ms.	....	Stamford, Ct.	....	6,397	W. Roxbury, Ms.
N. Bridgew're, R.I.	....	5,684	Providence, R.I.	60,068	Syracuse, N.Y.	28,199	Westfield, Ms.	....
Natick, Ms.	....	5,515	Potowom'k, N.Y.	14,729	Sche'clady, N.Y.	9,679	Westfield, R.I.	....
N. Provide'e, R.I.	....	5,192	Potkapee, N.Y.	....	Saugerties, N.Y.	9,836	Warwick, R.I.	....
N. Parishes, N.Y.	....	9,033	Providence, N.Y.	....	Seneca, N.Y.	....	10,004	Waterbury, Ct.
Newport, R.I.	10,506	Potsdam, N.Y.	6,737	Saratoga, N.Y.	....	8,445	West Troy, N.Y.	
New Haven, Ct.	39,368	Plattaburg, N.Y.	6,650	Saratoga, N.Y.	....	8,561	Waterlo'v, N.Y.	
Norwich, Ct.	....	14,027	Portsmouth, N.H.	....	Southhold, N.Y.	....	7,072	Watertown, N.Y.
N. London, Ct.	....	10,118	Phelpe, N.Y.	....	Sullivan, N.Y.	....	6,778	Woburn, Ms.
N. London, Ct.	....	10,118	Fatheron, N.J.	19,688	Scranton, Pa.	....	5,233	Woburn, Ms.
Norwalk, Ct.	....	7,592	Phili'd'phi'a, Pa.	565,591	Scranton, Pa.	....	5,233	Wilm'gton, Del.
New' Britain, Ct.	....	7,592	Phili'd'phi'a, Pa.	565,591	Staunton, Va.	....	14,124	Wilm'gton, D.C.
N. York, N.Y.	813,868	Pittsburg, Pa.	....	49,239	Savannah, Ga.	....	22,594	Wash'g'n, W. Va.
Newburg, N.Y.	1,198	Pottsville, Pa.	....	9,444	S. Antonio, Tex.	....	8,374	Waynes'b'o, Va.
Newtown, N.Y.	13,725	Pottervile, Pa.	....	18,268	Sandusky, O.	....	8,405	Wilm'gton, N.C.
Niagara, N.Y.	....	6,603	Portsmouth, Va.	18,268	Springfield, O.	....	7,302	Watertown, N.Y.
N. Hemp'd, N.Y.	5,419	Pensacola, Fla.	....	4,680	Portsmouth, Va.	....	6,393	Yonkers, N.Y.
Newark, N.J.	....	71,941	Prattville, Ala.	....	Steubenville, O.	....	6,184	York, Pa.
			Portsmouth, O.	Springfield, Ill.	6,393
			Portsmouth, O.	Springfield, Ill.	6,393	Zanesville, O.

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NEW-YORK AND WASHINGTON.

THERE are perhaps no two cities in this country to which inventors and patentees are more frequently called, in the course of business, than New-York and Washington. For the convenience of our inventive friends, we subjoin a list of the principal objects and places of interest, which they should endeavor to see whenever they visit either place. Inventors will always be welcome at our offices in New-York or Washington; and we hope they will "walk in" without knocking. We shall be happy to give them any information. (See page 13.)

WASHINGTON.—PLACES OF INTEREST.

Arsenal.	National Observatory
Alexandria, Va.	Navy Yard.
Aqueduct.	Navy Department.
Battle-Fields of Bull Run.	Potomac Falls.
Congressional Cemetery.	Presidential Mansion and Gardens.
Capitol and Grounds.	Patent Office.
Georgetown Heights.	Scientific American Office.
General Post-Office.	Smithsonian Institute.
Government Insane Asylum.	Soldier's Home.
Government Green-Houses.	Treasury Department.
Jackson's Statue.	War Department.
Long Bridge.	Washington Monument.
Mount Vernon.	Washington's Statues.

NEW-YORK.—PLACES OF INTEREST.

Academy of Music.	Greenwood Cemetery.
Academy of Design.	High Bridge.
Asylum for the Blind.	Hoboken.
Astor Library.	Navy Yard.
Atlantic Docks.	Post-Office.
Battery.	Scientific American Office.
Bible House.	Sub-Treasury.
Blackwell's Island.	South Street.
Central Park.	Staten Island.
City Hall.	Tomba.
Cooper Institute.	Trinity Church.
Croton Reservoir.	United States Custom House.
Dry Dock.	Washington Monument.
Fort Hamilton.	Worth Monument.
Fort Lafayette.	Wall Street.
Governor's Island.	Washington Market.

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Number 760.

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THE

UNITED STATES

PATENT LAW.

INSTRUCTIONS

How to Obtain Letters Patent

FOR NEW INVENTIONS,

WITH A KEY TO THE INFORMATION CONCERNING
THE PATENT LAW.

NUMBER 760. A GUIDE TO THE LAW OF PATENTS,

BY J. H. BREWER, New-York.

WITH A KEY TO THE INFORMATION CONCERNING
THE PATENT LAW.

THE
United States Patent Law.

INSTRUCTIONS

**HOW TO OBTAIN LETTERS PATENT
FOR NEW INVENTIONS,**

TOGETHER WITH A

Variety of Useful Information concerning
the Patent Law.

By MUNN & CO., SOLICITORS OF PATENTS,
No. 37 Park Row, New-York.

THE Patent Law Amendment Act, passed March 2, 1861, and now in force, introduced several important changes in our Patent System. The general practice of the Patent Office, however, in regard to the examination and issue of Letters Patent for new inventions, remains nearly the same as before the amendment.

There are a great variety of questions constantly arising under our Patent System that involve matters of great importance, not only to inventors and patentees, but to all who are in any way interested in patented inventions. We have endeavored, in the preparation of this pamphlet, to embrace all such points as are most important to those interests. The information is based upon our own experience of seventeen years as Solicitors of Patents, and upon decisions made by United States Courts in patent cases.

Wayne.....12,233	Whiteside.....16,740	Will'mson.....12,205	Winnebago.....24,492	Woodford.....19,293
White.....12,408	Will.....29,321		Total.....	1,711,783

WISCONSIN.—Area, 58,924 square miles.

Adams.....6,497	Dane.....43,902	Jefferson.....26,771	Oconto.....3,800	Shawano.....8,829
Ashland.....513	Dodge.....42,626	Junction.....8,704	Outagamie.....5,588	Sheboygan.....25,546
Bad Ax.....11,012	Door.....2,948	Kenosha.....15,516	Ozaukee.....10,674	St. Croix.....5,903
Brown.....11,797	Douglas.....528	Keweenaw.....5,530	Pepin.....2,397	Trempealeau.....2,446
Buffalo.....3,855	Dunn.....2,732	La Crosse.....12,194	Pierce.....4,072	Walworth.....26,006
Burnet.....12	Eau Claire.....8,184	Le Fayette.....14,141	Polk.....1,412	Washington.....23,656
Calumet.....7,898	F'd du Lac.....44,155	Le Pointe.....672	Portage.....7,504	Waupaca.....8,856
Chippewa.....1,895	Grant.....31,267	Manitowoc.....22,385	Racine.....21,340	Waupaca.....8,856
Clark.....7,894	Green.....19,851	Marathon.....2,033	Richland.....9,737	Waukesha.....8,772
Columbia.....24,445	Gr'n Lake.....12,631	Marquette.....8,230	Rock.....30,692	Waukesha.....23,760
Crawford.....6,071	Iowa.....18,988	Milwaukee.....21,500	Sauk.....18,884	Wood.....3,428
Dallas.....13	Jackson.....4,711	Monroe.....8,389	Total.....774,973	

IOWA.—Area, 50,914 square miles.

Adair.....984	Clarke.....6,477	Hamilton.....1,808	Madison.....7,788	Se........246
Adams.....1,533	Clay.....52	Hancock.....179	Mahaska.....14,816	Scott.....35,920
Alamakes.....12,296	Clayton.....20,738	Hardin.....5,446	Marion.....16,814	Shelby.....816
Appanoose.....11,923	Clinton.....15,938	Harrison.....3,623	Marshall.....6,015	Sloix.....10
Andrews.....454	Crawford.....282	Henry.....18,700	Mills.....4,480	Story.....4,003
Benton.....8,502	Dallas.....6,244	Howard.....2,183	Mitchell.....8,400	Tama.....8,285
Blk Hawk.....8,244	Davis.....13,764	Humboldt.....323	Monona.....882	Taylor.....3,446
Boone.....4,231	Decatur.....8,677	Ida.....43	Monroe.....8,611	Union.....8,613
Bremer.....4,918	Delaware.....11,025	Iowa.....8,029	Montgomery.....1,264	Van Buren.....1,063
Buchanan.....7,908	D'Ia Moine.....18,613	Jackson.....18,494	Muscatine.....16,444	Wapello.....14,816
Buena Vista.....57	Dickinson.....18,180	Jasper.....9,887	Oscoda.(noir.).....	Warren.....16,392
Buena Vista (notor.)	Dubuque.....31,186	Jefferson.....15,037	O'Brien.....8	Washington.....14,323
Buena Vista (notor.)	Fayette.....17,873	Jones.....104	Page.....4,419	Wayne.....8,411
Bueller.....3,794	Franklin.....12,071	Johnson.....17,873	Palo Alto.....183	Webster.....3,804
Calhoun.....147	Floyd.....8,785	Kokomo.....13,264	Plymouth.....148	Winnebago.....188
Carroll.....281	Franklin.....1,805	Kossuth.....416	Pocahontas.....108	Winnebago.....18,043
Cass.....1,612	Fremont.....6,074	Lee.....26,232	Polk.....11,826	Woodbury.....1,110
Cedar.....12,949	Frederick.....1,874	Linn.....18,980	Pottawatt.....4,982	Worth.....758
Cerro Gordo.....940	Green.....1,374	Linn.....18,980	Powershield.....8,670	Wright.....653
Cherokee.....87	Grinnell.....1,783	Louis.....10,370	Randall.....2,923	Total.....874,946
Chickasaw.....4,238	Guthrie.....3,058	Lucas.....5,780		

MINNESOTA.—Area, 85,274 square miles.

Aitken.....2	Dakota.....8,003	Kandiyohi.....78	Nicollet.....2,778	Sherburne.....734
Anoka.....2,106	Dodge.....3,797	Lake.....246	Nobie.....36	Sibley.....3,000
Becker.....388	Douglas.....188	Le Sueur.....5,816	Olmsted.....9,027	Sibley.....4,206
Benton.....627	Faribault.....1,882	Mankato.....188	Otter Tail.....240	Sibley.....3,200
Blue Earth.....4,602	Fillmore.....13,543	Marion.....188	Pembina.....1,618	St. Louis.....406
Breckenridge.....79	Freeborn.....3,837	Martin.....161	Pierce.....10	Todd.....39
Brown.....2,328	Guthrie.....8,597	McLeod.....1,266	Pine.....1,741	Wabasha.....40
Burnham.....26	Hennepin.....12,549	Meeker.....928	Pineapple.....22	Wabashaw.....7,228
Carlton.....81	Houston.....6,645	Millie Lac.....73	Polk.....240	Wahpeton.....22
Carver.....5,104	Iron.....5,845	Mnongahala.....580	Prairie.....12,150	Waseca.....2,001
Cass.....180	Iso........26	Morrison.....618	Premary.....16,444	Washington.....8,125
Chisago.....91	Itasca.....61	Morrison.....2,171	Revillie.....248	Winneshiek.....8,328
Cottonwood.....12	Jackson.....181	Mower.....2,317	Rice.....7,543	Winneshiek.....8,328
Crow Wing.....209	Kanabec.....30	Murray.....29	Scott.....4,604	Wright.....8,730
Total.....				172,622

MISSOURI.—Area, 67,880 square miles.

Adair.....8,831	Clay.....13,025	Howell.....3,169	Moorce.....14,786	St. Charles.....18,025
Andrew.....11,880	Clinton.....7,948	Iron.....5,842	Montgo'ry.....9,718	St. Clary.....8,009
Atchison.....4,849	Cole.....8,890	Jackson.....22,914	Morgan.....5,202	St. Francis.....7,248
Audrain.....8,074	Cooper.....17,355	Jasper.....6,888	M. Madrid.....5,653	St. Genev'ie.....8,029
Barry.....7,704	Crawford.....5,827	Jefferson.....10,344	Newton.....9,326	St. Louis.....10,633
Barton.....1,617	Dade.....7,073	Johnson.....14,844	Nodaway.....5,263	Saline.....14,700
Bates.....7,216	Dade.....7,073	Johnson.....14,844	Oregon.....3,009	Schuyler.....8,097
Benton.....9,072	Daviess.....9,903	Knox.....8,729	Pike.....7,879	Steinland.....8,973
Bellinger.....7,308	De Kalb.....5,294	Le Clede.....5,110	Osage.....2,447	Scott.....3,367
Beone.....19,487	Dent.....5,854	Lawrence.....8,847	Pemiscot.....2,981	Shanass.....3,264
Buchanan.....23,801	Dodge.....5,854	Lewis.....12,289	Perry.....9,128	Shelby.....7,201
Butler.....2,891	Douglas.....2,415	Lincoln.....14,214	Pettie.....9,492	Standard.....7,977
Caldwell.....5,034	Dunklin.....6,026	Linn.....9,113	Phelps.....5,914	Stone.....3,001
Callaway.....17,446	Franklin.....18,083	Livingston.....7,417	Pike.....16,420	Sullivan.....8,198
Camden.....4,975	Gasconade.....5,137	McDonald.....4,049	Piatte.....16,941	Taney.....8,976
C. G. Gir'd'ru'18,547	Gentry.....11,886	Macon.....14,407	Polk.....5,000	Texas.....8,000
Carroll.....9,778	Greene.....12,186	Madison.....5,064	Peusaki.....3,648	Vernon.....8,178
Carver.....1,284	Grundy.....7,595	Marion.....4,901	Petnam.....8,288	Warren.....8,083
Cass.....1,782	Harrison.....10,627	Marion.....18,228	Kalle.....5,422	Washington.....8,728
Cochran.....6,026	Heavy.....9,864	Mercer.....9,300	Randolph.....11,000	Wayne.....8,000
Charles.....12,009	Hickory.....4,765	Miller.....8,812	Ray.....14,001	Webster.....7,000
Christian.....5,491	Mississippi.....4,880	Moniteau.....10,064	Reynolds.....2,175	Wright.....8,000
Clark.....11,804	Howard.....16,940	Ripley.....2,737	Total.....1,322,317	

CALIFORNIA.—Area, 188,981 square miles.

Alameda...	5,977	Humboldt...	2,694	Nevada...	16,447	San Fran...	64,000	Stanislaus...	2,945
Anderson...	10,320	Imperial...	1,305	Placer...	18,270	San Joaquin...	6,034	Butter...	2,300
Barto...	12,167	L' Angel'ell...	2,285	Piumas...	4,363	S' L's Ob'el...	7,729	Tehama...	4,044
Citrus...	12,392	Marin...	2,284	Sacram'nto...	34,148	San Mateo...	3,214	Trinity...	5,125
Colusa...	2,274	Marijoes...	6,245	St. Barbara...	3,544	Shasta...	4,300	Tulare...	4,325
C'Dra Coors...	5,320	Mendocino...	2,387	St. Clara...	11,912	Sierra...	11,300	Tuolumne...	16,225
Del Norte...	1,962	Mered...	1,411	Santa Cruz...	4,945	Siskiyou...	7,029	Yolo...	4,716
El Dorado...	22,562	Monterey...	4,720	S. Bernard...	6,654	Solano...	7,170	Yuba...	12,671
Fresno...	4,805	Napa...	5,612	San Diego...	4,222	Sonoma...	11,887	Total...	300,916

OREGON.—Area, 102,606 square miles.

Benton...	3,074	Coeo...	284	Josephine...	1,673	Mullinomak...	4,150	Wasco...	1,800
Clackamas...	3,450	Curry...	303	Lane...	4,783	Polk...	3,025	Washing'a...	2,501
Clatsop...	468	Douglas...	3,264	Lane...	6,172	Tillamook...	96	Yam Hill...	3,245
Columbia...	532	Jackson...	3,734	Marion...	7,008	Umpqua...	1,250	Total...	32,664

KANSAS.—Area, 78,418 square miles.

Allen...	3,092	Clay...	163	Godfrey...	19	Lykens...	4,900	Pottawat'm...	468
Anderson...	2,400	Coffey...	2,642	Greenwood...	756	McGee...	1,401	Reiley...	1,226
Atchison...	7,739	Davis...	1,163	Hunter...	165	Marion...	74	Shawnee...	2,513
Bourbon...	6,102	Dickinson...	375	Jackson...	1,098	Marshall...	2,300	Wabanne...	1,964
Breckear'g...	5,522	Doniphan...	4,004	Jefferson...	4,456	Morr...	770	Washington...	200
Brown...	2,408	Dore...	88	Johnson...	4,363	Nebraska...	2,437	Wilson...	27
Butler...	437	Douglas...	6,637	Leaven'w...	12,606	Osage...	1,118	Woodson...	1,428
Chase...	806	Franklin...	3,081	Linn...	6,336	Otoe...	398	Wyandot...	2,000
Total...	.....	.....	.....	.....	.....	.....	.....	.....	107,110

The population of the Territories is rapidly increasing, and no reliable Census Report can be here presented.

Population of the Principal Cities and Towns.**Census of 1860.**

Augusta, Me...	7,000	Baton Rouge, La...	5,428	Danville, Pa...	6,356	Haverst'w, N.Y...	5,401
Abington, Ma...	8,257	Caisis, Me...	5,021	Dayton, O...	20,482	Hoboken, N.J...	8,022
Adams, Ms...	6,924	Concord, N.H...	10,926	Detroit, Mich...	4,619	Hudson, N.J...	7,320
Attleboro', Ms...	6,056	Cambridge, Ms...	26,060	Dubuque, Ia...	11,012	Hackens'k, N.J...	4,488
Albany, N.Y...	62,265	Char'stmw, Ms...	25,083	Davenport, Ia...	1,268	Harrisburg, Pa...	12,406
Ashburn, N.Y...	10,986	Chelsea, Ms...	13,395	Denver, Col...	749	Hempfield, Pa...	4,456
Arcadia, N.Y...	5,212	Chicopee, Ms...	7,261	Endfield, Ct...	997	Houston, Tex...	4,000
Adrian, Mich...	6,218	Cumberland, R.I...	18,359	Elmira, N.Y...	682	Hamilton, O...	7,223
Amherst, N.Y...	6,056	Cranston, R.I...	7,590	Ellisburg, N.Y...	614	Hannibal, Mo...	6,505
Alleghany, Pa...	26,703	Cortland, N.Y...	10,075	E. Chester, N.Y...	687	Ithaca, N.Y...	6,843
Allentown, Pa...	8,292	Cohoes, N.Y...	8,800	Elizabeth, N.J...	567	India'polis, Ind...	6,612
Alexandria, Va...	21,206	Columbia, N.Y...	14,955	Erie, Pa...	419	Iowa City, Ia...	6,214
Augusta, Ga...	12,493	Concord'g, N.Y...	7,075	Easton, Pa...	944	Johnstown, N.Y...	5,811
Atlanta, Ga...	9,564	Covington, N.Y...	6,778	Evansville, Ind...	485	Jamaica, N.Y...	6,516
Algiers, La...	5,816	Canton, N.Y...	6,379	Fall River, Mass...	277	JerseyCity, N.J...	20,296
Adrian, Mich...	6,218	Cumberland, N.Y...	6,275	Fitchburg, Mass...	705	Jackson'vle, Fla...	2,136
Alton, Ill...	6,333	Corning, N.Y...	6,000	Flushing, N.Y...	180	Jefferson, La...	5,107
Aurora, Ill...	6,011	Champain, N.Y...	5,837	Fishkill, N.Y...	540	Janesville, Wis...	7,703
Atchison, Kan...	2,616	Camden, N.J...	14,955	Frederick, Md...	143	Jeff'son City, Mo...	2,500
Bangor, Me...	16,407	Carlisle, Pa...	5,655	Frostburg, Md...	265	Key West, Fla...	2,853
Bideford, Me...	9,349	Carbondale, Pa...	5,675	Frederick'g, Va...	922	Kingston, N.Y...	10,940
Bath, Me...	8,076	Chamberlain, N.Y...	5,257	F't Wayne, Ind...	386	Kal'mazoo, Mich...	6,070
Belfast, Me...	5,920	Columbia, Pa...	5,007	F'd du Lac, Wis...	450	Kekuk, Ia...	8,137
Burlington, Vt...	7,713	Cumberland, R.I...	6,478	Fort Smith, Ark...	529	Lawrence, Kan...	1,645
Boston, Ms...	177,481	Charleston, S.C...	61,210	Gloucester, Mass...	903	Leaven'w, Kan...	7,426
Beverly, Ms...	6,154	Columbia, S.C...	5,082	Greenwich, Ct...	6,222	Lexington, Me...	4,116
Blackstone, Ms...	5,463	Columbus, Ms...	9,922	Greenbush, N.Y...	929	Lowell, Me...	30,827
Brookline, Ms...	5,164	Columbus, Miss...	3,303	Gales, N.Y...	340	Lyon, Ms...	10,000
Barnstable, Ms...	5,120	Cadmus, Ark...	1,343	Georgetown, D.C...	733	Lawrence, Ms...	17,620
Bristol, R.I...	5,271	Covington, Ky...	16,471	Galveston, Tex...	177	Lockport, N.Y...	12,623
Bridgewater, Ct...	12,290	Cincinnati, O...	161,044	G'd Rapids, Mich...	665	Lenox, N.Y...	8,024
B'lyn, N.Y...	296,664	Cleveland, O...	35,058	Galesburg, Ill...	698	Litt'l Falls, N.Y...	5,900
Buffalo, N.Y...	81,181	Chillicothe, O...	7,657	Golden City, Col...	614	Liebbo, N.Y...	6,646
B'haven, N.Y...	9,923	Chicago, Ill...	109,205	G't Salt La. City, Ia...	216	Lansing'g, N.Y...	5,577
B'rry, N.Y...	7,227	Carson City, Nev...	709	Haverhill, Ms...	998	Lyon, N.Y...	5,077
Bath, N.Y...	5,127	Dover, N.H...	5,092	Lancaster, Pa...	17,603		
Berges, N.J...	7,429	Dorchester, Ms...	9,759	Holyoke, Ms...	4,997		
Burlington, N.J...	17,174	Dedham, Ms...	5,350	Hartford, Ct...	152	Lynchburg, Va...	6,883
Birmingham, Pa...	6,045	Dawvers, Ms...	5,110	Hemp'dy, N.Y...	375	Little Rock, Ark...	2,797
Baltimore, Md...	212,419	Dunbury, Ct...	7,224	Huntington, N.Y...	926	Louisville, Ky...	66,740
Bloomington, Ill...	7,076	Derby, Ct...	5,444	Hudson, N.Y...	262	Lexington, Ky...	9,321
Burlington, Ia...	6,706	Deer Park, N.Y...	5,186	Hector, N.Y...	523	Lafayette, Ind...	9,426

The privilege secured under a caveat is, that it entitles the caveatator to receive notice, for a period of one year, of any application for a patent filed during that time, and which is adjudged to be novel, and is likely to interfere with the invention described in the caveat; the caveatator is then required to complete his application for a patent within three months from the date of such notice. Caveat-papers should be very carefully prepared. Our fee for this service varies from \$10 to \$15. The Government fee under the new law is reduced to \$10, but this sum does not apply, as heretofore, as part of the fee on presenting an application for a patent.

Inventors will oftentimes find it very important to take advantage of the caveat system, the expense being comparatively small.

To enable us to prepare caveat-papers, we require only a sketch and description of the invention; no model being necessary.

Under the security afforded by a caveat, inventors should bear in mind that they cannot prevent other parties from using their inventions. The mere filing of a caveat does not allow the caveatator to sell exclusive rights, as in the case of the issue of Letters Patent. It entitles him only to the right to receive notice of an interfering application, but does not settle the question of novelty in his behalf. A caveat may be renewed from year to year upon the payment of the usual official fee.

Caveat-papers cannot be withdrawn from the office nor undergo alteration after they have once been filed; but additional papers relative to the invention may be appended to the caveat, (their date being noted,) provided they are merely amendatory of the original caveat.

The right to file a caveat extends only to citizens, or to aliens who have resided in the United States one year, and have made oath of their intention to become citizens.

EXPENSE OF APPLYING FOR A PATENT, REJECTIONS, ETC.

Under the new law, the Government fee, on filing an application for a patent, is \$15, besides \$1 revenue stamp.

tax on the power of attorney; and if the patent is allowed, \$20 additional is required. If rejected, the first fee of \$15 is all that is demanded. English, French, Prussian, Austrian, Spanish, and inventors of every nationality, may now obtain patents in the United States upon the same terms as our own citizens. The only discrimination made is against subjects of Governments that discriminate against the inhabitants of the United States.

To the foregoing official fees must be added the attorney's fee for preparing the various documents and drawings. Our charge for *preparing a case, presenting it to Government, and attending to all business connected with it, until a decision is given*, is generally \$25; but the charge is higher if unusual labor is involved. If the patent is granted, no further agency expense ensues.

If the application is rejected, we cause a *thorough investigation to be made*, at Washington, into the reasons presented by the Commissioner for refusing the patent. In making this examination we have access to all the drawings, models, books, and specifications cited in reference, and we report the result as early as possible to our client. *For this service we make no charge.*

If the rejection proves to be an unjust one—which sometimes happens—it can generally be reversed, and the patent obtained by contesting the case. *For this prosecution we charge a fee proportionate to the extra labor involved, payable only on the issue of the patent; but our demand will be reasonable and satisfactory to our clients, and will be arranged beforehand by special agreement, and no charge whatever will be made for this prosecution, unless we succeed in procuring the grant of LETTERS PATENT.*

GENERAL REMARKS.—For the information of applicants, we would state that some agents are in the habit of charging for the preparation of the case, and, having no further facilities, *decline all investigation or prosecution when rejected.* Others, also having no facilities of their own, advise their clients to go to the expense of procuring official copies of the drawings and specifications of all the references. Again, others are in the habit of charging a high price at the out-

set, in which they include the cost of prosecuting the case, if by them deemed necessary. Under this system, if the patent issues, or is justly rejected, no further prosecution is needed; but the inventor has paid full price for a service not wanted and never rendered.

Our object in making the above statement is, not to reflect upon the manner in which other agents conduct their affairs, but simply to have our own method of doing business clearly understood.

The system adopted by us works well, gives general satisfaction, and presents to all applicants, rich or poor, an equal opportunity of having their patent cases prepared, conducted and prosecuted *in the best manner*, by experienced attorneys, upon the most moderate terms. Inventors who have REJECTED CASES, prepared either by themselves or for them by other agents, and desire to ascertain their prospects of success by further efforts, are invited to avail themselves of our unequalled facilities in securing favorable results. We have been successful in securing Letters Patent in HUNDREDS of SUCH CASES. Our terms for such services are very moderate.

MODELS, REMITTANCES, ETC.

The law requires that the inventor shall, in all cases, furnish a model, which must not exceed twelve inches in any of its dimensions. It should be neatly made, of hard wood or metal, or both, varnished or painted. The name of the inventor and his place of residence should be attached to it, or painted upon it conspicuously. Where the invention consists of an improvement on some known machine, a full working model of the whole will not be necessary. It should be sufficiently perfect, however, to show, with clearness, the nature and operation of the invention.

As soon as the model is ready, it should be carefully boxed and shipped by express or otherwise, to our address, namely, MUNN & Co., No. 37 Park Row, New-York City. Prepay the expense, and send the express receipt to us by mail.

Simultaneously with the model, the inventor should also send us the first installment of the Government fee, \$15.

The money may be forwarded either by express, with the model, or by mail. The safest way to remit is by draft on New-York, payable to our order. Always send a letter with the model, and also with the remittance, stating the name and address of the sender. We sometimes receive envelopes containing money, but without any name or explanation; models are also frequently sent us from equally unknown sources.

A full written description should also be sent with the model, embodying *all the ideas of the inventor respecting the improvement.*

On the reception of the model and Government fee, the case is duly registered upon our books, and the application proceeded with as fast as possible. When the documents are ready, we send them to the inventor by mail, for his examination, signature, and affidavit, with a letter of instruction, etc. *Our fee for preparing the case is then due*, and will be called for. Immediately on its return the case will be presented to the Patent Office, and as soon as the patent is allowed, the applicant will be notified to remit the last installment of the Government fee, namely, \$20, and the patent will then be issued.

Inventors who do business with us will be notified of the state of their application in the Patent Office, when it is possible for us to do so. We do not require the personal attendance of the inventor, unless the invention is one of great complication; the business can be done as well by correspondence.

When the invention consists of a new article of manufacture, or a new composition, samples of the separate ingredients sufficient for the purpose of experiment, and also of the manufactured article itself, must be furnished.

The average time required to procure a patent, when the case is conducted at our Agency, is six weeks. We frequently get them through in less time; but in other cases, owing to delay on the part of the officials, the period is sometimes extended to two or three months, and even more. We make a special point to forward our cases *as rapidly as possible.*

Models in rejected cases are not returned by the Patent Office. The new law authorized their return, but the Patent Office has, as yet, made no provision in this respect, and the models are therefore, as formerly, kept in the archives for reference.

DESIGNS, TRADE-MARKS, LABELS, ETC.

Under the new law, Design-patents may be taken out for *any new form of any article*, also for tools, patterns, castings, machine-frames, stove-plates, borders, fringes; all new designs for printing, weaving, or stamping upon silks, calicoes, carpets, oil-cloth prints, paper-hangings, and other articles. Trade-marks, labels, envelopes, boxes and bottles for goods, may also be patented; likewise all works of art, including prints, paintings, busts, statues, bas-reliefs or compositions in alto or basso reliefo, new dies, impressions, ornaments to be placed or used upon any article of manufacture, architectural work, etc. The term for which Design-patents are granted varies according to the fee paid by the applicant, as follows:

Patent for 8½ years,.....	.....	\$10.
" 7 " .....	.....	15.
" 14 " .....	.....	30.

No Design-models are required. But duplicate drawings must be furnished, together with the usual specification, petition, and affidavit, which, to render the patent of value, should be prepared with the utmost care.

Our facilities for the prompt preparation and securing of Design-patents are of the most extensive character, and our charges are very moderate.

GOING TO WASHINGTON IN PERSON.

Some inventors suppose, very naturally, that if personally present in Washington, they can get their cases through more expeditiously, or command other facilities which they

cannot enjoy by mere correspondence through an agency like ours. But this is not so. *No inventor can possibly have facilities or influence superior to our own*, for more than ONE THIRD of the entire business of the Patent Office passes through our hands; and we have an office in Washington charged with the especial duty of watching over and pressing forward the interests of our clients. The Patent Office does not prepare or amend imperfect patent-papers, or make models. These must be provided by the applicant or his attorney, according to law, *otherwise his claim will not be considered*. The new law especially requires that all papers filed in the Patent Office shall be correctly, legibly and clearly written. For the convenience of those who visit Washington in person, we will state that they can have all their patent business *promptly attended to*, by calling at our BRANCH "SCIENTIFIC AMERICAN" OFFICE, corner of Seventh and F streets, opposite the Patent Office.

INFRINGEMENTS.

The manufacture, sale or use of a patented article, without consent of the owner of the patent, is an *infringement*, and subjects the infringer, by injunction from the Court, to an arrest or prohibition from the employment of his machinery, shop, works, factory, and men in the production of the article. In addition to injunction, the infringer is liable to be mulcted in treble the amount of damages awarded by the jury. The maker, the workman, the seller, and the purchaser (if a user) are all liable, either collectively or individually.

Having access to all the patents, models, public records, drawings, and other documents pertaining to the Patent Office, we are prepared to make examinations and give opinions upon all infringement questions, advise as to the scope and ground covered by patents, and direct with vigor any legal proceedings therewith connected. Our charges will be moderate, and proportionate to the labor involved.

Address all letters of inquiry to MUNN & Co., No. 37 Park Row, New-York.

STAMPS ON POWERS OF ATTORNEY.

By the Act to provide Internal Revenue to support the Government, and to pay the interest on the Public Debt, it is required by the Commissioner of Patents that a stamp or stamps to the amount of *one dollar* must be attached to all powers of attorney authorizing an agent or attorney to act for the inventor relative to applications for Patents.

The same amount of stamps must also be affixed to all powers of attorney authorizing an agent to sell Patents.

APPEALS.

In rejected and other cases, the new law provides for an appeal from the Examiners-in-chief to the Commissioner in person, on the payment of a fee of \$20. A further appeal may be taken from the decision of the Commissioner to the United States Court of the District of Columbia. These appeals are heard by any one of the judges before whom the applicant elects to bring the case; no jury. All the papers, models, etc., are sent by the Commissioner to the judge, who then reviews the case, and either sustains or reverses the Commissioner's decision. The party taking the appeal pays an official fee of \$25. The judge appoints a day of hearing. The applicant can appear in person or by counsel to state his case and file a written argument. Five days are allowed the opponent to put in an answer, and a similar period to the appellant for a closing reply.

Many important cases are brought before the judges on appeal, and the decisions of the Commissioner are not unfrequently reversed. We have had successful experience in conducting these appeals, and our services can be retained on moderate terms.

INTERFERENCES.

If an inventor happens to apply for a patent when another application for a similar device is pending at the Patent Office, the two cases are declared by the Commissioner

to "interfere," and each party is notified to present evidence as to the date when he first invented the thing. He who proves priority of invention receives the patent, and the other applicant is rejected.

Even after a patent has been granted, another inventor may come forward and apply for a patent for the same device; and if he can prove priority of invention the Commissioner will issue a patent to him.

The management of Interferences is one of the most important in connection with Patent Office business. Our terms for attention to Interferences are moderate, and dependent upon the time required. Address all letters to MUNN & Co., No. 37 Park Row, New-York.

EXTENSION OF PATENTS.

Under the new law, all patents issued after March 4, 1861, continue in force seventeen years instead of fourteen, as heretofore, and cannot be extended; but patents granted prior to the above date may be extended for a period of seven years.

Many valuable patents are annually expiring which might readily be extended, and, if extended, might prove the source of wealth to their fortunate possessors.

We are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives, or assigns, as to the current law and the mode of procedure in order to obtain a renewed grant.

The statute of 1836 provides that, when an inventor has failed to receive a sufficient reward for his invention, without fault on his part, during the existence of the original patent, he may apply to the Commissioner for an extension of the term; and the Commissioner, on the presentation of proper proofs touching the amounts received by the applicant, the value of the invention, etc., is empowered to extend the patent for seven years, so that it will run for a period of twenty-one years from its original date. Some of the most valuable grants now existing are *extended patents*.

All the documents connected with extensions require to be carefully drawn up and attended to, as any failure, discrepancy, or untruth in the proceedings or papers is liable to defeat the application. Applicants for extensions should always place the management of their cases, from first to last, in the hands of faithful and experienced patent attorneys. Ordinary lawyers or agents, who have had no experience in extension cases, should never undertake them.

Pattees or, if deceased, their heirs, may apply for the extension of patents, but must give ninety days' notice of their intention.

The assignees of a patent cannot obtain this extension—it must be done by the inventor, or, in case of his death, by his legal representatives. It must also appear to the Commissioner of Patents that the extension is to inure to the benefit of the original patentee, or he will not allow it.

Parties owning machines under the original patent will be entitled to use them after the date of extension, until these machines are worn out; but new machines cannot be built without the patentee's consent.

Patents may be extended, and preliminary advice obtained, by consulting or writing to MUNN & Co., No. 37 Park Row, New-York.

ABANDONMENT OF AN INVENTION.

The papers and models pertaining to all patented inventions, and also of rejected cases that are two years old, are exposed to public view at the Patent Office in Washington. When any new application for a patent is filed, the Commissioner causes an examination to be made to ascertain whether the alleged improvement has before been patented or rejected. If the same invention is found to have been on public view at the Patent Office for more than two years, either in the patented or rejected departments, the new applicant is held to have *abandoned his invention to the public*; he has not used reasonable diligence in filing his application, and he cannot receive a patent even though he may have been the earliest inventor. Many inventors suffer the loss

of their rights to a patent by reason of delay. We cannot too urgently press upon them the importance of making their applications promptly; delays are dangerous and often fatal.

RE-ISSUE OF A DEFECTIVE PATENT.

The law provides that whenever a patent, heretofore granted, is found to be inoperative or invalid by reason of a defective or imperfect description or claim, the error may be corrected by surrendering the original patent, and filing in new or amended papers, which are subject to examination the same as in the case of the original application. Under a re-issue the law does not allow an inventor to embrace different subject-matter than that shown in the original application. All the new features to be claimed must be fully shown either in the original papers or model.

A re-issue does not extend the term of the original patent. The matter of extension is treated of under another head. If the amended claims cannot be allowed, the original patent will be returned by the Commissioner upon the order of the applicant or his attorney. The patent fee on a re-issue is \$30, and the agency fee is usually \$25.

VALIDITY OF PATENTS.

It often becomes an important question whether a patent is actually valid after it is issued. A patent to be valuable must be able to stand the test of legal investigation, though it seldom happens that decisions of Courts are rendered adverse to patents that come up for trial; but it frequently happens that, in the course of such investigations, the specifications and claims may exhibit serious defects.

Purchasers of patents, or those who engage in the manufacture of patented articles, are frequently annoyed by threats of prosecution for some alleged infringement of existing patents. They will usually save themselves trouble and expense by having the necessary searches made, to determine the validity of such claims as may be made against

them, and also of the patents they are about to purchase, or in which they are interested.

It is a part of our business to investigate into the validity of patents, which necessarily involves an extended and careful search. Our fees for such services are always very reasonable.

COPIES OF PATENTS AND CLAIMS.

Having access to all the patents granted since the rebuilding of the Patent Office, after the fire of 1836, we can furnish the claims of any patent granted since that date, for \$1.

Persons wishing copies of claims should distinctly understand that for the fee of \$1 we do not engage to furnish a copy of the specification and drawing of the patent. All we undertake to do for this small charge is to supply a written copy of the claim. If parties wish for copies of the complete patent, we can supply them from the records of the Patent Office, at charges varying from \$3 to \$25, depending upon the length of the specification and amount of drawing in each case. The Commissioner fixes his own charges for copies of patents, and does not allow them to be made except by persons connected with the Patent Office.

LEGAL INFORMATION ABOUT PATENTS.

There are a great variety of questions arising under the patent laws, in respect to patents, which are important to all owners of patents, manufacturers, venders, etc., upon which we are frequently addressed for information and advice. We are always happy to answer these inquiries whenever we can do so, and have sought to embody them in this pamphlet, which is freely given to all; but special inquiries frequently subject us to much trouble in searching the proper authorities. Parties who thus use our time should remit a small fee to compensate us for our services; or if they prefer to search for themselves, we refer them to the continuous files since 1844 of the SCIENTIFIC AMERICAN, which contain information upon every conceivable point relating to patents and the Patent Law.

THE SALE OF PATENTS.

We are frequently receiving letters requesting us to act as agents for the sale of patents, or to procure capitalists to aid inventors in bringing out their discoveries. We are desirous of aiding inventors all that we possibly can, but we made it a rule at the outset of our professional career, not to engage in the sale of patents. We thus keep ourselves free from all suspicion of speculating in inventions. We devote our entire time to the interests of our clients, and to the publication of the **SCIENTIFIC AMERICAN**, leaving the introduction and sale of patents to others. We have no pecuniary interests whatever in any existing patent, though we are frequently offered favorable opportunities to take such interests. We offer the free use of the columns of the **SCIENTIFIC AMERICAN** to patentees to illustrate and describe their improvements, charging for the cost of the engravings, which will be given to the inventor after publication. This is undoubtedly the best medium in the world through which to bring out new and useful improvements.

PATENTS IN CANADA.

Frequent inquiry is made of us respecting the taking-out of patents in Canada. Under the present colonial law, patents can only be secured by resident subjects, who must be the inventors of the thing for which the patent is sought. This effectually cuts off American citizens from that protection which, under the ordinary principles of reciprocity, ought to exist between ourselves and those colonies. This illiberal system is a disgrace to the statute-book, and we hope it will soon be repealed. Owing to this discrimination, all Canadians who apply for patents here have to pay a Government fee of \$500. As soon as the Canadian law is modified so as to allow our citizens to enjoy equal protection, Canadians will at once enjoy all the advantages afforded by our law.

THE INVENTOR MUST APPLY FOR THE PATENT.

It is necessary in all cases that an application for a patent should be made by the *inventor*. He cannot transfer this by right to another, as he must make oath to the invention. The inventor can, by assignment at the time the application is made, transfer his rights, so that the patent may issue to assignees. Foreign inventors frequently labor under the misapprehension that, by means of a power-of-attorney, the application can be made by another party.

RECORDING ASSIGNMENTS.

There are three classes of assignments that must be put upon record at the Patent Office, within three months from their date, in order to insure their validity against subsequent purchasers. These are, first, an assignment of the entire patent; second, an undivided portion of a patent; third, the sale of an exclusive right under a patent for a particular territory.

Under the Internal Revenue Act of July 1, 1862, all assignments of patents, whether stamped or not, will be recorded, and the fact whether or not the instrument recorded is stamped will be noted upon the record. In order to make these assignments operative in law, a stamp must be put upon them, either before or after their record, to the value of *five cents*, on every sheet or piece of paper. This refers only to assignments recorded after the first of January, 1863. No assignment *directing a patent to issue to an assignee or assignees*, dated after the first day of January, 1863, will be recognized by the Patent Office, unless every sheet or piece of paper, upon which such assignment shall be written, shall have affixed thereto a stamp of the value of *five cents*.

We attend to preparing and putting assignments on record.

SUGGESTIONS ABOUT FOREIGN PATENTS.

American inventors should bear in mind that, as a general rule, any invention which is valuable to the patentee in this country, is worth equally as much in England and some other foreign countries. Four patents—American, English, French and Belgian—will secure an inventor exclusive monopoly to his discovery among *one hundred millions* of the most intelligent people in the world. The facilities of business and steam communication are such that patents can be obtained abroad by our citizens almost as easily as at home. The majority of all patents taken out by Americans in foreign countries are obtained through the **SCIENTIFIC AMERICAN PATENT AGENCY**. Having established agencies at all the principal European seats of Government, we obtain patents in Great Britain, France, Belgium, Prussia, Austria, Spain, etc., with promptness and dispatch. *A Circular, containing further information and a synopsis of the Patent Laws of various countries, will be furnished on application to Messrs. MUNN & Co., No. 37 Park Row, New-York.*

It is generally much better to apply for foreign patents *simultaneously* with the application here; or, if this cannot be conveniently done, as little time as possible should be lost after the patent is issued, as the laws in some foreign countries allow patents to any one who first makes the application, and in this way many inventors are deprived of valid patents for their own inventions. Many valuable inventions are yearly introduced into Europe from the United States by parties ever on the alert to pick up whatever they can lay their hands upon that may seem useful.

Models are not required in any European country, but the utmost care and experience are necessary in the preparation of the specifications and drawings.

When parties intend to take out foreign patents, engravings should not be published until the foreign applications have been made.

CAUTION.—It has become a somewhat common practice for agents located in England to send out circulars solicit-

ing the patronage of American inventors. We caution the latter against heeding such solicitations, or they may otherwise fall into the hands of irresponsible parties, and thus be defrauded of their rights. It is much safer for inventors to intrust their cases to the care of a competent, reliable agent at home.

While it is true of most European countries that the system of examination is not so rigid as that practiced in this country, yet it is vastly important that inventors should have their papers prepared only by the most competent solicitors, in order that they may stand the test of a searching legal examination; as it is a common practice, when a patentee finds a purchaser for his invention, for the latter to cause such examination to be made before he will accept the title.

It is also very unsafe to intrust a useful invention to any other than a solicitor of known integrity and ability. Inventors should beware of speculators, whether in the guise of Patent Agents or Patent Brokers, as they cannot ordinarily be trusted with valuable inventions.

Messrs. MUNN & Co. have been established *seventeen years* as American and Foreign Patent Attorneys, and Publishers of the *SCIENTIFIC AMERICAN*, and during this time they have been intrusted with some of the most important inventions of the age; and it is a matter of pardonable pride in them to state that not a single case can be adduced in which they have ever betrayed the important trust committed to their care. Their agents in London, Paris, and other Continental cities are among the oldest and most reliable Patent Solicitors in Europe; MUNN & Co. will have no connection with any other.

GENERAL REMARKS.

MESSRS. MUNN & Co. have been personally familiar with the progress of invention and discovery during *seventeen years*. As an evidence of the confidence reposed in their ability and integrity, they may with propriety refer to the extraordinary fact that more than **THREE THOUSAND PATENTS** have been issued to their clients in the brief

space of only TWO YEARS; and during the same period they have examined, through their efficient Branch Office in Washington, into the novelty of over *four thousand inventions*; thus affording to them a knowledge of the contents of the Patent Office unrivaled by any existing agency. Not only this, but more than one half of all the patents secured by American citizens in European countries are taken through MUNN & CO.'S AGENCIES IN LONDON, PARIS, BRUSSELS, BERLIN, AND VIENNA.

During a single month in 1860, *one hundred and forty-four American Patents* were issued to our clients.

The convenient proximity of our Washington house to the Patent Office gives us rare facilities for the examination of all the official records, models, drawings, specifications, documents, etc. We can promptly furnish copies of any patent, assignment, etc. Searches made as to the sale or transfer of rights. Assignments and special agreements carefully prepared, etc.

In addition to the advantages which the long experience and great success of our firm in obtaining patents present to inventors, they are informed that all inventions patented through our establishment are noticed, *at the proper time*, in the SCIENTIFIC AMERICAN. This paper is read by more than one hundred thousand persons every week, and has the most extensive and influential circulation of all the journals of its kind in the world.

We make these statements in order that parties who come to us for aid and information may feel, at the outset, that they are applying to men who are reliable, skillful, and successful in the business.

No individual in the country can possibly have so good an opportunity of knowing and judging as to the extent of business and the qualifications of patent attorneys as the *Commissioner of Patents*. That officer is charged with the entire administration of the U. S. Patent Office. All its records are under his keeping and supervision; all correspondence is signed by him; and all patents issued are laid before him for signature. A certificate from a source so high and authentic can not fail to command general respect

and attention. Judge MASON, upon retiring from the office of Commissioner of Patents, sent us the following very flattering written testimonial:

MESSRS. MUNN & Co.:—I take pleasure in stating that, while I held the office of Commissioner of Patents, **MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS.** I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers.

Yours, very truly,

CHAS. MASON.

Judge MASON was succeeded by that eminent patriot and statesman, Hon. JOSEPH HOLT, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed us the following very gratifying letter:

MESSRS. MUNN & Co.:—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements.

Very respectfully, your obedient servant, J. HOLT.

Hon. W.M. D. BISHOP, late Member of Congress from Connecticut, succeeded Mr. HOLT as Commissioner of Patents. Upon resigning the office, he wrote to us as follows:

MESSRS. MUNN & Co.:—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency; and that I have ever found you faithful and

devoted to the interests of your clients, as well as eminent-
ly qualified to perform the duties of Patent Attorneys with
skill and accuracy.

Very respectfully, your ob't servant, Wm. D. BISHOP.

One great reason for our unrivaled success is, that our affairs are so systematized and arranged, under our personal direction, that every patent case submitted to our care receives the most careful study during its preparation, the most prompt dispatch when all the patent-papers are completed, and the most thorough attention at every stage of its subsequent progress.

We employ, to assist us, the most experienced corps of examiners, specification-writers, and draughtsmen, that can be found. We have a branch house at Washington, supervised by one of our partners, and located directly opposite to the Patent Office, for the especial purpose of attending to the interests of our clients, making searches, examinations, etc. In sort, we believe that no other concern can present so great an array of talent, business facilities, influence, and practical experience, as that which we throw open to the service of our clients.

All communications should be addressed to MUNN & CO., No. 37 Park Row, New-York.

MISCELLANEOUS ITEMS.

Employers have sometimes supposed that inventions made by persons while in their service properly belonged to them. The claim is presumptuous and unwarrantable, unless their exists a special agreement to the contrary. If the inventor under such circumstances was not especially employed to bring out the invention for his employer's benefit, the latter has no right to it.

Under a recent decision of the Attorney-General, it is held that all free native-born persons, without distinction as to age, sex or color, are *citizens*, within the meaning of the Constitution; consequently, all such may apply for patents.

Inventors may publicly use and sell their inventions for

two years *prior* to making application for a patent, but cannot hinder others from doing the same thing; and should any party put the invention into use before such application for a patent is made, they could continue to use the specific machine or composition of matter after the patent is issued to another.

Inventors ought to be reasonably careful about exposing their inventions, and are urged to apply for their patents with all reasonable dispatch.

Minors can take out patents without the consent of their natural or legal guardians; but in order to transfer their rights while in their minority, they would need to obtain an order from the Court authorizing such transfer of property.

The opinion prevails among Patent Lawyers that one of the owners of a joint patent may use and sell the invention for his own benefit, so long as he does not debar the other owners from the right to do the same. We know of no decision of the Courts on this point.

A patent is held subject to the laws of the United States, and cannot therefore be attached for debt by the ordinary process of attachment under the laws of the various States; a patented machine, however, can be attached the same as other material property. In case, however, of the bankruptcy of a patentee, his patent-right could be assigned, by operation of law, by his legal assignee or receiver.

The Commissioner of Patents has no power to annul an existing patent. He can order an interference to be declared between an existing patent and a pending application for a patent for the same invention, and then require testimony from each party in order to substantiate the question of priority of invention. If this is proved by the applicant for the pending case, the Commissioner exercises the right to grant the second patent. The evidence produced in the examination would confer a *prima facie* right upon the successful party.

Each State exercises the right to decide *what* shall be sold, and *how* it shall be sold, within its borders, under what are known as license laws; therefore peddlers of pat-

ented articles cannot sell them in any State where such laws exist, without obtaining a license from the proper authorities; but an inventor, we think, may sell rights under his patent without regard to license laws.

STAMPING PATENTED ARTICLES.

Under this head the reader will find the requirements of the Patent Law fully set forth in Section 18th of the Patent Law Amendment Act, printed on another page. No patentee should fail to stamp the date of the issuance of his patent on the article offered for sale, as otherwise his rights are liable to be infringed with impunity. Any one who stamps "Patent" on an article which is not patented, is guilty of fraud on the public and is liable to fine.

OF GIVING OR WITHHOLDING INFORMATION.

Aside from the caveats, which are required by law to be kept secret, all pending applications at the Patent Office are, as far as practicable, preserved in like secrecy. No information will be given to those inquiring whether any particular application is before the office, or whether any particular person has applied for a patent.

In cases where two applications interfere, and a declaration to that effect is made by the Commissioner, each of the contestants is entitled to a knowledge of so much of his antagonist's case as is necessary for the proper management of his own.

The Patent Office does not answer inquiries as to the novelty of an alleged invention in advance of an application for a patent. Business with the Patent Office is conducted under prescribed rules, made in accordance with the laws, and the Commissioner cannot disregard them. Inventors ought always to act under the advice of competent attorneys.

THE IMPORTANCE OF THE SPECIFICATION.

Too much importance cannot be attached, by an applicant for a patent, to the manner in which the specification

and drawings are prepared, as upon these will depend the *legal* value of the patent. Many inventors suppose that by taking the forms of specification, petition, and oath here prescribed by the Patent Office, they will have no trouble in getting an official decision upon their applications. This is an erroneous impression, and has led many applicants into great trouble and expense, much more than they would have incurred if they had employed, at the outset, a competent and experienced patent solicitor. This matter is so very important, that Curtis, in his celebrated Treatise on the Law of Patents, devotes eighty-one pages to its consideration.

The specification must describe in full, clear, and exact terms the nature and operation of the invention; and the claim on which the patent will be founded, when granted, must be very carefully drawn. While it is easy, comparatively, to prepare drawings for a patent, the specification should never be undertaken except by one who thoroughly understands the business.

RETAINING PATENTS IN THE SECRET ARCHIVES.

No application upon which a patent has been ordered to issue shall be retained in the secret archives of the Office more than six months from the day on which the patent was ordered to issue. The request to have the application placed in the secret archives shall in all cases be made by the patentee, or the assignee of all the interest therein, in writing, and filed with the chief clerk, before the patent shall be ordered to issue.

OF FOREIGN PATENTS.

The taking out of a patent in a foreign country does not prejudice a patent previously obtained here; nor does it prevent obtaining a patent here subsequently.

When the patent is applied for here after being obtained abroad, it will expire with the date of the foreign patent. For this reason such cases will be acted upon out of their order, and as soon as the application is completed.

If the applicant is an alien not residing in the United States, or if he has not taken the necessary steps to become naturalized, the oath must be modified accordingly.

The oath may be taken before any person authorized by law to administer oaths.

When the oath is taken *in a foreign country*, it must be taken before any minister plenipotentiary, chargé d'affaires, consul, or commercial agent, holding commission under the government of the United States, or before any notary public of the country in which the oath is taken, being attested in all cases by the proper official seal.

WHO ARE ENTITLED TO PATENTS.

Any person, whether citizen or alien, may obtain a patent for any invention or improvement made by him, and not before known.

The assignee of any invention may have the patent issue to him directly, but this is held to apply only to assignees of entire interests; so that, although when the inventor assigns his *entire* interest to two or more, a patent will issue to them jointly, still if he yet retains an unequal portion in himself, a joint patent will not be issued to him and them.

In case of the death of the inventor, the patent will issue to his legal representatives.

Joint inventors are entitled to a joint patent; but neither can claim one separately.

WHAT WILL PREVENT THE GRANTING OF A PATENT.

Even although the applicant has in good faith actually made an invention, a patent therefor will not be granted him if the whole or any part of *what he claims* as new had before been patented, or described in any printed publication, in this or any foreign country, or even if it had before been invented or discovered *in this country*, or if he has once abandoned his invention to the public; or if, with his consent and allowance, it has been for more than two years in public use or on sale.

The mere fact of prior invention or discovery abroad will not prevent the issue of the patent, unless the invention had been there patented, or described in some printed publication.

Merely conceiving the idea of an improvement or machine in this country, is not such an "invention" or "discovery" as is above contemplated. The invention must have been reduced to a practical form, either by the construction of the machine itself, or of a model thereof, or at least by making a drawing of it, or in some other manner equally descriptive of its character.

Inventions for which patents are solicited are duly classified in the Patent-Office, for examination, and are taken up in their order, in classes—and not, as some suppose, in regular rotation—on "the first come first served" principle. Cases can not be thus examined, as such a system would lead to confusion.

Whenever the class comes up to which the invention belongs, it will receive examination, even though the case may not have been on file more than one day, and it must wait till the class does come up, though it may be one, three, or six months.

SCHEDULE OF PATENT FEES.

Under the new Patent Law, the following schedule of fees is established :

On filing each Caveat,.....	\$10
On filing each application for a Patent, except for a design,.....	15
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On application for Re-issue,.....	30
On application for Extension of Patent,.....	50
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On filing Disclaimer,.....	10
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The duration of patents granted under the present law is prolonged to SEVENTEEN years, and the Government fee required on filing an application for a patent is reduced from

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A patentee can not possibly adopt any other medium which is equal to this, in order to make known his improvement. The judicious use of the newspaper press is one of the surest roads to success in business.

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37 Park Row, N. Y.

THE NEW PATENT LAW.

AN ACT IN ADDITION TO "AN ACT TO PROMOTE THE PROGRESS OF THE USEFUL ARTS."

*SECTION 1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Commissioner of Patents may establish rules for taking affidavits and depositions required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any justice of the peace, or other officer authorized by law to take depositions to be used in the courts of the United States, or in the State courts of any State where such officer shall reside ; and in any contested case pending in the Patent Office, it shall be lawful for the clerk of any court of the United States for any district or Territory, and he is hereby required, upon the application of any party to such contested case, or the agent or attorney of such party, to issue subpoenas for any witnesses residing or being within the said district or Territory, commanding such witnesses to appear and testify before any justice of the peace, or other officer as aforesaid, residing within the said district or Territory, at any time and place in the subpoena to be stated ; and if any witness, after being duly served with such subpoena, shall refuse or neglect to appear, or, after appearing, shall refuse to testify, (not being privileged from giving testimony,) such refusal or neglect being proved to the satisfaction of any judge of the court whose clerk shall have issued such subpoena, said judge may thereupon proceed to enforce obedience to the process, or to punish the disobedience in like manner as any court of the United States may do in case of disobedience to process of *subpena ad testificandum* issued by such court ; and witnesses in such cases shall be allowed the same compensation as is allowed to witnesses attending the courts of the United States : *Provided*, That no witness shall be required to attend at any place more than forty miles from the place where the subpoena shall be served upon him to give a deposition under this law : *Provided, also*, That no witness shall be deemed guilty of contempt for refusing to disclose any *secret* invention made or owned by him : *And provided, further*, That no witness shall be deemed guilty of contempt for disobeying any subpoena directed to him by virtue of this act, unless his fees for going to, returning from, and one day's attendance at the place of examination shall be paid or tendered to him at the time of the service of the subpoena.*

SEC. 2. And be it further enacted, That, for the purpose of secur-

ing greater uniformity of action in the grant and refusal of Letters Patent, there shall be appointed by the President, by and with the advice and consent of the Senate, three Examiners-in-Chief, at an annual salary of three thousand dollars each, to be composed of persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the applicant for that purpose being filed, to revise and determine upon the validity of decisions made by Examiners when adverse to the grant of Letters Patent; and also to revise and determine in like manner upon the validity of the decisions of Examiners in interference cases, and when required by the Commissioner in application for the extension of patents, and to perform such other duties as may be assigned to them by the Commissioner; that from their decisions appeals may be taken to the Commissioner of Patents in person, upon payment of the fee hereinafter prescribed; that the said Examiners-in-Chief shall be governed in their action by the rules to be prescribed by the Commissioner of Patents.

SEC. 3. *And be it further enacted*, That no appeal shall be allowed to the Examiners-in-Chief from the decisions of the Primary Examiners, except in interference cases, until after the application shall have been twice rejected; and the second examination of the application by the Primary Examiner shall not be had until the applicant, in view of the references given on the first rejection, shall have renewed the oath of invention, as provided for in the seventh section of the act entitled, "An act to promote the progress of the useful arts, and to repeal all acts and parts of acts heretofore made for that purpose," approved July fourth, eighteen hundred and thirty-six.

SEC. 4. *And be it further enacted*, That the salary of the Commissioner of Patents, from and after the passage of this act, shall be four thousand five hundred dollars per annum, and the salary of the Chief Clerk of the Patent Office shall be two thousand five hundred dollars, and the salary of the Librarian of the Patent Office shall be eighteen hundred dollars.

SEC. 5. *And be it further enacted*, That the Commissioner of Patents is authorized to restore to the respective applicants, or, when not removed by them, to otherwise dispose of such of the models belonging to rejected applications as he shall not think necessary to be preserved. The same authority is also given in relation to all models accompanying applications for designs. He is further authorized to dispense in future with models of designs, when the design can be sufficiently represented by a drawing.

SEC. 6. *And be it further enacted*, That the tenth section of the act, approved the third of March, eighteen hundred and thirty-seven, authorizing the appointment of agents for the transportation of models and specimens to the Patent Office, is hereby repealed.

SEC. 7. *And be it further enacted*, That the Commissioner is further authorized, from time to time, to appoint, in the manner already provided for by law, such an additional number of principal Examiners, First Assistant Examiners, and Second Assistant Examiners as may be required to transact the current business of the Office with dispatch, provided the whole number of additional Examiners shall not

exceed four of each class, and that the total annual expenses of the Patent Office shall not exceed the annual receipts.

SEC. 8. *And be it further enacted*, That the Commissioner may require all papers filed in the Patent Office, if not correctly, legibly, and clearly written, to be printed at the cost of the parties filing such papers; and for gross misconduct he may refuse to recognize any person as a patent agent, either generally or in any particular case; but the reasons of the Commissioner for such refusal shall be duly recorded, and subject to the approval of the President of the United States.

SEC. 9. *And be it further enacted*, That no money paid as a fee on any application for a patent, after the passage of this act, shall be withdrawn or refunded, nor shall the fee paid on filing a caveat be considered as part of the sum required to be paid on filing a subsequent application for a patent for the same invention.

That the three months' notice given to any caveator, in pursuance of the requirements of the twelfth section of the act of July fourth, eighteen hundred and thirty-six, shall be computed from the day on which such notice is deposited in the Post-Office, at Washington, with the regular time for the transmission of the same added thereto, which time shall be indorsed on the notice; and that so much of the thirteenth section of the act of Congress, approved July fourth, eighteen hundred and thirty-six, as authorizes the annexing to Letters Patent of the description and specification of additional improvements, is hereby repealed, and in all cases where additional improvements would now be admissible, independent patents must be applied for.

SEC. 10. *And be it further enacted*, That all laws now in force fixing the rate of the Patent Office fees to be paid, and discriminating between the inhabitants of the United States and those of other countries which shall not discriminate against the inhabitants of the United States, are hereby repealed, and in their stead the following rates are established:

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On filing each disclaimer, ten dollars.

For certified copies of patents and other papers, ten cents per hundred words.

For recording every assignment, agreement, power of attorney, and other papers of three hundred words or under, one dollar.

For recording every assignment, and other papers, over three hundred and under one thousand words, two dollars.

For recording every assignment or other writing, if over one thousand words, three dollars.

For copies of drawings, the reasonable cost of making the same.

SEC. 11. *And be it further enacted*, That any citizen or citizens, or alien or aliens, having resided one year in the United States, and taken the oath of his, her, or their intention to become a citizen or citizens, who, by his, her, or their own industry, genius, efforts, and expense, may have invented or produced any new and original design for a manufacture, whether of metal or other material or materials, and original design for a bust, statue, or bas-relief, or composition in alto or basso rallevò, or any new and original impression or ornament, or to be placed on any article of manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture, to be either worked into or worked on, or printed, or painted, or cast, or otherwise fixed on any article of manufacture, or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor, and who shall desire to obtain an exclusive property or right therein to make, use, sell, and vend the same, or copies of the same to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor, as in the case now of application for a patent, for the term of three and one half years, or for the term of seven years, or for the term of fourteen years, as the said applicant may elect in his application: *Provided*, That the fee to be paid in such application shall be, for the term of three years and six months, ten dollars, for seven years fifteen dollars, and for fourteen years thirty dollars. *And provided*, That the patentees of designs under this act shall be entitled to the extension of their respective patents for the term of seven years from the day on which said patents shall expire, upon the same terms and restrictions as are now provided for the extension of Letters Patent.

SEC. 12. *And be it further enacted*, That all applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable, and all applications now pending shall be treated as if filed after the passage of this act; and all applications for the extension of patents shall be filed at least ninety days before the expiration thereof; and notice of the day set for the hearing of the case shall be published, as now required by law, for at least sixty days.

SEC. 13. *And be it further enacted*, That in all cases where an article is made or vended by any person under the protection of Letters Patent, it shall be the duty of such person to give sufficient notice to the public that said article is so patented, either by fixing thereon the word patented, together with the day and year the patent was granted; or when, from the character of the article patented, that may be impracticable, by enveloping one or more of the said articles, and affixing a label to the package, or otherwise attaching thereto a label on which the notice, with the date, is printed; on failure of which, in any suit for the infringement of Letters Patent by the party failing so to mark the article, the right to which is infringed upon, no damage shall be recovered by

the plaintiff, except on proof that the defendant was duly notified of the infringement, and continued after such notice to make or vend the article patented. And the sixth section of the act, entitled, "An Act in addition to an act to promote the progress of the useful arts," and so forth, approved the twenty-ninth day of August, eighteen hundred and forty-two, be, and the same is hereby, repealed.

SEC. 14. *And be it further enacted*, That the Commissioner of Patents be, and he is hereby authorized to print, or, in his discretion, to cause to be printed, ten copies of the description and claims of all patents which may hereafter be granted, and ten copies of the drawings of the same, when drawings shall accompany the patents: *Provided*, The cost of printing the text of said descriptions and claims shall not exceed, exclusive of stationery, the sum of two cents per hundred words for each of said copies, and the cost of the drawings shall not exceed fifty cents per copy; one copy of the above number shall be printed on parchment, to be affixed to the Letters Patent. The work shall be under the direction, and subject to the approval, of the Commissioner of Patents, and the expense of the said copies shall be paid for out of the patent fund.

SEC. 15. *And be it further enacted*, That printed copies of the Letters Patent of the United States, with the seal of the Patent Office affixed thereto, and certified and signed by the Commissioner of Patents, shall be legal evidence of the contents of said Letters Patent in all cases.

SEC. 16. *And be it further enacted*, That all patents hereafter granted shall remain in force for the term of seventeen years from the date of issue, and all extensions of such patents are hereby prohibited.

SEC. 17. *And be it further enacted*, That all acts and parts of acts heretofore passed which are inconsistent with the provisions of this act, be, and the same are hereby, repealed.

Approved March 2, 1861.

NOTE.—MESSRS. MUNN & CO. will undertake to advise patentees and assignees in respect to all questions arising under the law of patents, and will supply them with all necessary legal counsel in reference to the bringing of suits for infringements, and the defence of the same; also in interfering and extension cases.

INTERESTING LETTERS FROM INVENTORS
AND PATENTEES.

The accompanying correspondence is but a small portion of that which has been addressed to Messrs. MUNN & Co., testifying to their unparalleled success in prosecuting applications for patents. These letters are uniformly written in excellent taste, and reflect credit upon their authors. It is a mistake to suppose that inventors as a class are ignorant men; such letters as are herewith presented are a complete refutation of such an assertion.

Messrs. MUNN & Co. have received hundreds of such letters from their grateful clients from all sections of the country. If republics are ungrateful, inventors are not.

MESSRS. MUNN & Co.:—During the past three months I have employed you to prepare and prosecute six applications for patents, and I take pleasure in stating that all these cases were granted without any essential alteration in the papers. In all my experience as an inventor, which covers a space of twenty-five years, (my first patent was granted in 1834,) I have never had applications so thoroughly and satisfactorily prepared. Any one contemplating to procure patents has but to visit your immense establishment, and watch the complete system which governs it throughout—as I have done from day to day—to be satisfied that it is the place, above all others, to apply for information and professional aid in all matters pertaining to Letters Patent for inventions. Tendering to you and your efficient corps of examiners my thanks for the courtesy and fidelity shown to me and to my business, I am, gentlemen,

Your obliged friend, JOHN W. COCHRAN.

New-York.

MESSRS. MUNN & Co.:—Noticing from time to time, in the columns of the SCIENTIFIC AMERICAN, extracts of letters from parties for whom you have acted as attorneys, complimentary to you, I beg to state my own experience in obtaining patents through your agency, as a testimonial of my appreciation of your ability in preparing patent-papers and

and drawings are prepared, as upon these will depend the *legal* value of the patent. Many inventors suppose that by taking the forms of specification, petition, and oath here prescribed by the Patent Office, they will have no trouble in getting an official decision upon their applications. This is an erroneous impression, and has led many applicants into great trouble and expense, much more than they would have incurred if they had employed, at the outset, a competent and experienced patent solicitor. This matter is so very important, that Curtis, in his celebrated Treatise on the Law of Patents, devotes eighty-one pages to its consideration.

The specification must describe in full, clear, and exact terms the nature and operation of the invention; and the claim on which the patent will be founded, when granted, must be very carefully drawn. While it is easy, comparatively, to prepare drawings for a patent, the specification should never be undertaken except by one who thoroughly understands the business.

RETAINING PATENTS IN THE SECRET ARCHIVES.

No application upon which a patent has been ordered to issue shall be retained in the secret archives of the Office more than six months from the day on which the patent was ordered to issue. The request to have the application placed in the secret archives shall in all cases be made by the patentee, or the assignee of all the interest therein, in writing, and filed with the chief clerk, before the patent shall be ordered to issue.

OF FOREIGN PATENTS.

The taking out of a patent in a foreign country does not prejudice a patent previously obtained here; nor does it prevent obtaining a patent here subsequently.

When the patent is applied for here after being obtained abroad, it will expire with the date of the foreign patent. For this reason such cases will be acted upon out of their order, and as soon as the application is completed.

If the applicant is an alien not residing in the United States, or if he has not taken the necessary steps to become naturalized, the oath must be modified accordingly.

The oath may be taken before any person authorized by law to administer oaths.

When the oath is taken *in a foreign country*, it must be taken before any minister plenipotentiary, chargé d'affaires, consul, or commercial agent, holding commission under the government of the United States, or before any notary public of the country in which the oath is taken, being attested in all cases by the proper official seal.

WHO ARE ENTITLED TO PATENTS.

Any person, whether citizen or alien, may obtain a patent for any invention or improvement made by him, and not before known.

The assignee of any invention may have the patent issue to him directly, but this is held to apply only to assignees of entire interests; so that, although when the inventor assigns his *entire* interest to two or more, a patent will issue to them jointly, still if he yet retains an unequal portion in himself, a joint patent will not be issued to him and them.

In case of the death of the inventor, the patent will issue to his legal representatives.

Joint inventors are entitled to a joint patent; but neither can claim one separately.

WHAT WILL PREVENT THE GRANTING OF A PATENT.

Even although the applicant has in good faith actually made an invention, a patent therefor will not be granted him if the whole or any part of *what he claims* as new had before been patented, or described in any printed publication, in this or any foreign country, or even if it had before been invented or discovered *in this country*, or if he has once abandoned his invention to the public; or if, with his consent and allowance, it has been for more than two years in public use or on sale.

The mere fact of prior invention or discovery abroad will not prevent the issue of the patent, unless the invention had been there patented, or described in some printed publication.

Merely conceiving the idea of an improvement or machine in this country, is not such an "invention" or "discovery" as is above contemplated. The invention must have been reduced to a practical form, either by the construction of the machine itself, or of a model thereof, or at least by making a drawing of it, or in some other manner equally descriptive of its character.

Inventions for which patents are solicited are duly classified in the Patent-Office, for examination, and are taken up in their order, in classes—and not, as some suppose, in regular rotation—on "the first come first served" principle. Cases can not be thus examined, as such a system would lead to confusion.

Whenever the class comes up to which the invention belongs, it will receive examination, even though the case may not have been on file more than one day, and it must wait till the class does come up, though it may be one, three, or six months.

SCHEDULE OF PATENT FEES.

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For copies of drawings, the reasonable cost of making the same.

Sec. 11. *And be it further enacted*, That any citizen or citizens, or alien or aliens, having resided one year in the United States, and taken the oath of his, her, or their intention to become a citizen or citizens, who, by his, her, or their own industry, genius, efforts, and expense, may have invented or produced any new and original design for a manufacture, whether of metal or other material or materials, and original design for a bust, statue, or bas-relief, or composition in alto or basso rilievo, or any new and original impression or ornament, or to be placed on any article of manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture, to be either worked into or worked on, or printed, or painted, or cast, or otherwise fixed on any article of manufacture, or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor, and who shall desire to obtain an exclusive property or right therein to make, use, sell, and vend the same, or copies of the same to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor, as in the case now of application for a patent, for the term of three and one half years, or for the term of seven years, or for the term of fourteen years, as the said applicant may elect in his application: *Provided*, That the fee to be paid in such application shall be, for the term of three years and six months, ten dollars, for seven years fifteen dollars, and for fourteen years thirty dollars. *And provided*, That the patentees of designs under this act shall be entitled to the extension of their respective patents for the term of seven years from the day on which said patents shall expire, upon the same terms and restrictions as are now provided for the extension of Letters Patent.

Sec. 12. *And be it further enacted*, That all applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable, and all applications now pending shall be treated as if filed after the passage of this act; and all applications for the extension of patents shall be filed at least ninety days before the expiration thereof; and notice of the day set for the hearing of the case shall be published, as now required by law, for at least sixty days.

Sec. 13. *And be it further enacted*, That in all cases where an article is made or vended by any person under the protection of Letters Patent, it shall be the duty of such person to give sufficient notice to the public that said article is so patented, either by fixing thereon the word patented, together with the day and year the patent was granted; or when, from the character of the article patented, that may be impracticable, by enveloping one or more of the said articles, and affixing a label to the package, or otherwise attaching thereto a label on which the notice, with the date, is printed; on failure of which, in any suit for the infringement of Letters Patent by the party failing so to mark the article, the right to which is infringed upon, no damage shall be recovered by

exceed four of each class, and that the total annual expenses of the Patent Office shall not exceed the annual receipts.

SEC. 8. *And be it further enacted*, That the Commissioner may require all papers filed in the Patent Office, if not correctly, legibly, and clearly written, to be printed at the cost of the parties filing such papers; and for gross misconduct he may refuse to recognise any person as a patent agent, either generally or in any particular case; but the reasons of the Commissioner for such refusal shall be duly recorded, and subject to the approval of the President of the United States.

SEC. 9. *And be it further enacted*, That no money paid as a fee on any application for a patent, after the passage of this act, shall be withdrawn or refunded, nor shall the fee paid on filing a caveat be considered as part of the sum required to be paid on filing a subsequent application for a patent for the same invention.

That the three months' notice given to any caveator, in pursuance of the requirements of the twelfth section of the act of July fourth, eighteen hundred and thirty-six, shall be computed from the day on which such notice is deposited in the Post-Office, at Washington, with the regular time for the transmission of the same added thereto, which time shall be indorsed on the notice; and that so much of the thirteenth section of the act of Congress, approved July fourth, eighteen hundred and thirty-six, as authorizes the annexing to Letters Patent of the description and specification of additional improvements, is hereby repealed, and in all cases where additional improvements would now be admissible, independent patents must be applied for.

SEC. 10. *And be it further enacted*, That all laws now in force fixing the rate of the Patent Office fees to be paid, and discriminating between the inhabitants of the United States and those of other countries which shall not discriminate against the inhabitants of the United States, are hereby repealed, and in their stead the following rates are established:

On filing each caveat, ten dollars.

On filing each original application for a patent, except for a design, fifteen dollars.

On issuing each original patent, twenty dollars.

On every appeal from the Examiners-in-Chief to the Commissioner, twenty dollars.

On every application for the re-issue of a patent, thirty dollars.

On every application for the extension of a patent, fifty dollars; and fifty dollars in addition on the granting of every extension.

On filing each disclaimer, ten dollars.

For certified copies of patents and other papers, ten cents per hundred words.

For recording every assignment, agreement, power of attorney, and other papers of three hundred words or under, one dollar.

For recording every assignment, and other papers, over three hundred and under one thousand words, two dollars.

For recording every assignment or other writing, if over one thousand words, three dollars.

For copies of drawings, the reasonable cost of making the same.

Sec. 11. And be it further enacted, That any citizen or citizens, & alien or aliens, having resided one year in the United States, and take the oath of his, her, or their intention to become a citizen or citizens who, by his, her, or their own industry, genius, efforts, and expense may have invented or produced any new and original design for manufacture, whether of metal or other material or materials, an original design for a bust, statue, or bas-relief, or composition in alt or basso relieve, or any new and original impression or ornament, to be placed on any article of manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture, to be either worked into or worked on, or printed, or painted or cast, or otherwise fixed on any article of manufacture, or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor, and who shall desire to obtain an exclusive property or right therein to make, use, sell, and vend the same, or copies of the same to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor, as in the case now of application for a patent, for the term of three and one half years, or for the term of seven years, or for the term of fourteen years, as the said applicant may elect in his application: *Provided*, That the fee to be paid in such application shall be, for the term of three years and six months, ten dollars, for seven years fifteen dollars, and for fourteen years thirty dollars. *And provided*, That the patentees of designs under this act shall be entitled to the extension of their respective patents for the term of seven years from the day on which said patents shall expire, upon the same terms and restrictions as are now provided for the extension of Letters Patent.

Sec. 12. And be it further enacted, That all applications for patents shall be completed and prepared for examination within two years after the filing of the petition, and in default thereof, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable, and all applications now pending shall be treated as if filed after the passage of this act; and all applications for the extension of patents shall be filed at least ninety days before the expiration thereof; and notice of the day set for the hearing of the case shall be published, as now required by law, for at least sixty days.

Sec. 13. And be it further enacted, That in all cases where an article is made or vended by any person under the protection of Letters Patent, it shall be the duty of such person to give sufficient notice to the public that said article is so patented, either by fixing thereon the word patented, together with the day and year the patent was granted; or when, from the character of the article patented, that may be impracticable, by enveloping one or more of the said articles, and affixing a label to the package, or otherwise attaching thereto a label on which the notice, with the date, is printed; on failure of which, in any suit for the infringement of Letters Patent by the party failing so to mark the article, the right to which is infringed upon, no damage shall be recovered by

the plaintiff, except on proof that the defendant was duly notified of the infringement, and continued after such notice to make or vend the article patented. And the sixth section of the act, entitled, "An Act in addition to an act to promote the progress of the useful arts," and so forth, approved the twenty-ninth day of August, eighteen hundred and forty-two, be, and the same is hereby, repealed.

Sec. 14. And be it further enacted, That the Commissioner of Patents be, and he is hereby authorized to print, or, in his discretion, to cause to be printed, ten copies of the description and claims of all patents which may hereafter be granted, and ten copies of the drawings of the same, when drawings shall accompany the patents: *Provided*, The cost of printing the text of said descriptions and claims shall not exceed, exclusive of stationery, the sum of two cents per hundred words for each of said copies, and the cost of the drawings shall not exceed fifty cents per copy; one copy of the above number shall be printed on parchment, to be affixed to the Letters Patent. The work shall be under the direction, and subject to the approval, of the Commissioner of Patents, and the expense of the said copies shall be paid for out of the patent fund.

Sec. 15. And be it further enacted, That printed copies of the Letters Patent of the United States, with the seal of the Patent Office affixed thereto, and certified and signed by the Commissioner of Patents, shall be legal evidence of the contents of said Letters Patent in all cases.

Sec. 16. And be it further enacted, That all patents hereafter granted shall remain in force for the term of seventeen years from the date of issue, and all extensions of such patents are hereby prohibited.

Sec. 17. And be it further enacted, That all acts and parts of acts heretofore passed which are inconsistent with the provisions of this act, be, and the same are hereby, repealed.

Approved March 2, 1861.

NOTE.—Messrs. MUNN & Co. will undertake to advise patentees and assignees in respect to all questions arising under the law of patents, and will supply them with all necessary legal counsel in reference to the bringing of suits for infringements, and the defence of the same; also in interfering and extension cases.